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# The Outlook

## Balpanic ?

IN connection with the tests now being made over the England-Bermuda route of refuelling in the air, the British Air Line Pilots' Association appears to have become alarmed, ostensibly about the safety aspect but, one suspects, even more about the question of responsibility.

The central board of B.A.L.P.A. has applied to the Ministry of Civil Aviation for information concerning the regulations about minimum separation of aircraft in flight; safety precautions against fire, collision, and failure to make contact with the tanker; and the presence of petrol in certain parts of the aircraft. These are all very pertinent questions, and not only B.A.L.P.A. but the general public are entitled to full and complete answers. However, we should have thought that one of the main purposes of the test was precisely to obtain these answers, and thus the questions seem to have been somewhat ill timed.

Last week we published an account by Capt. Alabaster, a senior pilot of B.S.A.A., on his experiences, and he certainly did not give the impression of being alarmed about the safety angle. In fact, he stated that "No extra flying skill on the part of the air line pilot is demanded for refuelling in the air, and 'George' can fly during the transfer. The tanker should never come closer than 150 feet." Probably the explanation of the timing of the questions is to be found in the fact that B.A.L.P.A. regrets that it was not approached before the trials took place.

An Editorial in the July issue of "The Log" (the official journal of the British Air Line Pilots' Association) states that there is a possibility that the introduction of the system (refuelling in the air) may seriously affect the pilot's position as master of the aircraft and that, in bringing these various points to the attention of the Ministry of Civil Aviation, "it has been stressed that it is a fundamental in the profession of air line pilot that the Captain—invariably the pilot—is completely responsible for the safety of his aircraft and passengers while in flight. It is thought that he cannot have this complete responsibility when his aircraft is being refuelled in flight by an aircraft that is close overhead which indeed, in cloud, visually, may not be seen, and which may or may not be piloted by a senior pilot with air line experience."

That appears to us a very curious argument. All the pilot of the aircraft which is being refuelled has to do while fuel is being passed is to fly straight and level, and as Capt. Alabaster says, "George" can do that. Certainly the responsibility for the safety of both aircraft is transferred, for the few minutes which the operation takes, to the pilot of the tanker. But why should it be assumed that he may or may not be an experienced pilot? No air line which adopts flight refuelling is likely to put inexperienced men in such a responsible job. As for the transfer of responsibility, we do not remember ever hearing of the captain of an ocean liner resenting the fact that for the last few miles he has to hand over to a pilot while steaming into port. Yet that is what he does in most cases.

## Flying-boats Again

ADMIRATION for the Latécoère 631 flying-boat which visited this country last week, a description of which appears in this issue, must be increased by the knowledge that the basic design dates back to 1938, and by the fact that the boat was built in spite of German occupation, changes of government and all the other difficulties inherent in such military and political circumstances. There were technical troubles as well, and it may be recalled that the first of the boats suffered airscrew breakages which damaged the hull and caused injury to passengers. But the troubles were overcome, and France now has a flying-boat which, in spite of the date of its conception, will

be a very useful addition to her commercial air fleet.

It is worthy of note that no fewer than ten of these boats have been ordered already, and that still more may quite likely be ordered later. These orders include one for three boats from the Government of Mexico, so that not only France but other nations can be seen to be seriously interested in this type of aircraft.

Our own Saunders-Roe SR/45 will be a great step forward—when it appears—but in the meantime B.O.A.C. is having to managed with smaller boats. The second Shetland, a combined product of Shorts and Saunders-Roe (the first was sunk at its moorings by fire) is nearing completion and will be flown in the near future. It is not quite so large as the Latécoère (130,000 lb against 157,000 lb), and has four engines compared with six, but the total power with four Bristol Centaurus engines is comparable with that of the French machine. Long range is combined with good payload, and the Shetland could be a very acceptable aircraft.

For passenger comfort the accommodation initially visualized for the Shetland was of a very high standard, suitable for long non-stop flights. Several alternative arrangements are, of course, possible.

It is known that parts for another six Shetlands or so were manufactured during the earlier stages, and it would be good policy to build these. There is no guarantee how long it will be before the SR/45, with its airscrew-turbine power units, can go into service, and it would be but prudent to take steps to ensure that there shall be no serious gaps caused by unforeseen delays in our long-term planning. The completion of the other Shetlands is, we maintain, a national duty which should not be shirked.

At the other end of the scale we have the first test flight of the little Saunders-Roe twin-jet fighter, the first jet-propelled flying-boat in the world. This type of aircraft may well be the beginning of a quite different application of the flying-boat to Service duties, and as such its future career will be watched with more than ordinary interest. At present it promises well.

CONTENTS


| | |
|---|---|
| Outlook | 73 |
| Airspeed Ambassador | 75 |
| "Know-How" from the Trent | 79 |
| Air Rally—Deauville Style | 80 |
| Here and There | 83 |
| Bristol 167 | a |
| Lincolns Westward Bound | 85 |
| Massive Elegance | 87 |
| Civil Aviation News | 89 |
| Correspondence | 93 |
| Service Aviation | 94 |

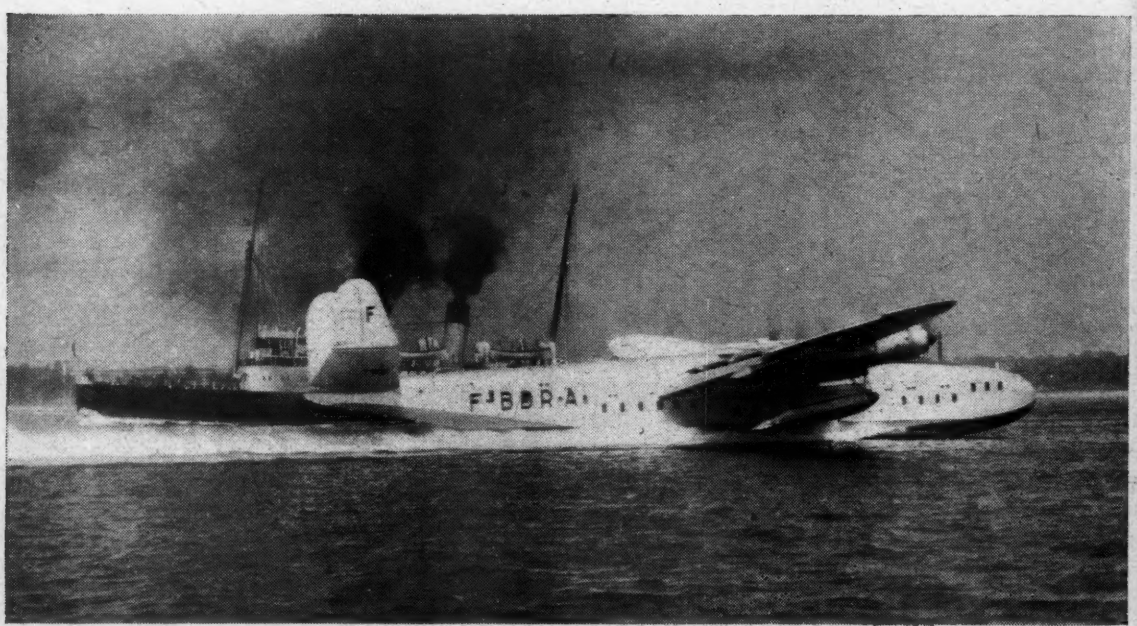
*Forthcoming Events, page 93*


## Accident Investigation

ELSEWHERE in this issue we publish a statement issued recently by the Guild of Air Pilots and Navigators. It deals with the existing procedure followed in investigating and reporting air accidents, and certain criticisms are made which deserve careful study. So do the suggestions for improvement.

Two items in the statement are of particular interest. It is suggested that the Accidents Investigations Branch should be made entirely independent of the Air Ministry and Ministry of Civil Aviation, and the Court of G.A.P.A.N. considers that the Treasury would be a suitable authority. Just why the Treasury has been selected is not clear, but a very good case could certainly be made out for giving complete independence to the court of enquiry.

With the complaint that the present system of stating the "immediate cause" and the "contributory cause" is apt to lead to misunderstanding we are in complete agreement, and a change in this respect would help to make the intention of the court of enquiry clearer. As it is, the impression is often given that the pilot is mainly to blame when in fact that is not intended.



*"Flight" photograph.*

SHIPS THAT PASS: *The Latécoère 631, a description of which will be found on pp. 87-88, takes off from Southampton Water as the old Isle of Wight steam packet paddles by at her leisurely pace.*

# AIRSPEED AMBASSADOR

*Taxying out from the Christchurch flight sheds the Ambassador is given scale by the surroundings. Inset : for the first flight the large spinners were not fitted.*

## *Further Details of the A.S.57 : Unique Control Transmission*

As recorded in last week's issue, the maiden flight of the Airspeed Ambassador was made on July 10th. The aircraft, a structural analysis of which was given in the April 10th issue of *Flight*, performed quite satisfactorily during its 45 minutes' initial flight, and holds promise of establishing for itself a very useful position during the coming years.

Planned from the start with the cardinal objective of economic civil airline operation, the Ambassador is somewhat larger than the medium-range types at present in use, yet is smaller than the aircraft intended for really long-range routes. It can be offered in standard pressurized and unpressurized guise and with varying accommodation layouts to cater for 28, 36, 40 or 48 passengers. The high-wing position offers the advantage of easy loading and a good view for the passengers, and standard refinements include thermal anti-icing, reverse-thrust airscrew braking, steerable nosewheel, integral fuel tanks, and self-contained interchangeable power plants.

In the first optimistic flushes which lighted the introduction of gas turbines and, later, airscrew-turbines, the employment of the conventional piston engine was rudely and somewhat prematurely thrust aside by many. It is now being realized that, even with so (relatively) simple a prime mover as the gas turbine, the necessary development period of *circa* five years cannot very well be reduced. This is not to say that airscrew-turbines will not be in service until 1952 ; it is quite possible that some specimens will, but it is now patent that the conventionally powered aircraft will retain a useful place certainly for the next five, and possibly for the next ten years.

The Ambassador is well situated from the power-unit aspect. Its high order of aerodynamic efficiency makes it equally suitable for drive by conventional or airscrew-turbine means ; in fact, it is true to say that provision for the installation of airscrew-turbines, when ready, was envisaged in the design layout.

Power is provided by two Bristol Centaurus 631 engines which give 2,600 b.h.p. each for take-off. This mark of the Centaurus range has been designed especially for civil operation, but there is every intent to develop it to give higher take-off powers. In this connection the structure of the Ambassador has been designed to allow the maximum all-up weight to be increased to more than 50,000 lb when higher powers are available. Even so, the form design of the aircraft is such that exceptional performance is obtained for a low expenditure of power and, therefore, large reserves are available to give a very wide range of

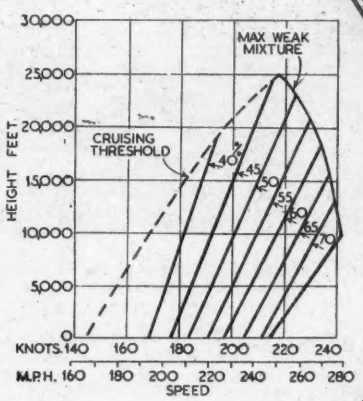
*D. C. T. Bennet, director and general manager of B.S.A.A., talking over the control layout with the Ambassador's designer, A. E. Hagge.*

# AIRSPEED AMBA

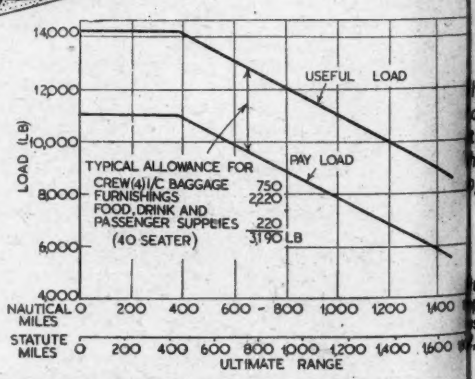
cruising speeds and an ample safety margin for emergencies.

A cruising-speed range of from 180 to 270 m.p.h. is possible without exceeding 60 per cent M.E.T.O. power and whilst operating within the weak-mixture range up to 15,000 ft. Full-compliance with all the proposed I.C.A.O. satety requirements is achieved. With one engine dead, the Ambassador's fully loaded rate of climb, with undercarriage down and the airscrew windmilling, is 190 ft/min, this rising to 525 ft/min when the undercarriage is retracted and the airscrew feathered. These figures are for an all-up weight of 47,000 lb and a take-off power of 2,600 b.h.p. The single-engine service ceiling (100 ft/min R.o.C.), when using only weak-mixture power, is 10,000ft.

The control cabin in the Ambassador is very neatly laid out and, in common with the aircraft as a whole, exhibits that obvious degree of patience and forethought in design which characterizes the machine. Pilots' seats are very comfortable and incorporate full adjustment for position and, in addition, have the rather clever refinement that forward of the seat cushion are arranged articulated thigh pads, cross-coupled by an ingenious crank linkage, so that they move in sympathy with leg action for rudder-pedal operation; it is not likely in an aircraft of this character that very much rudder pedal movement will be needed, but even so, the movable thigh-pad feature is a pleasant thing for pilots to have which might well be copied for other aircraft.




*Curves of speed at varying heights for different percentages of max. continuous cruising power (2180 b.h.p.) at an all-up weight of 47,000 lb.*



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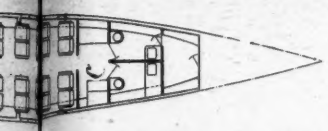
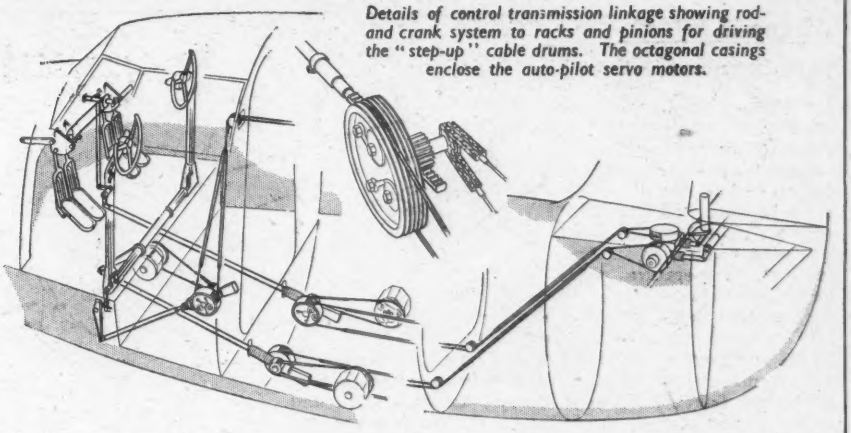
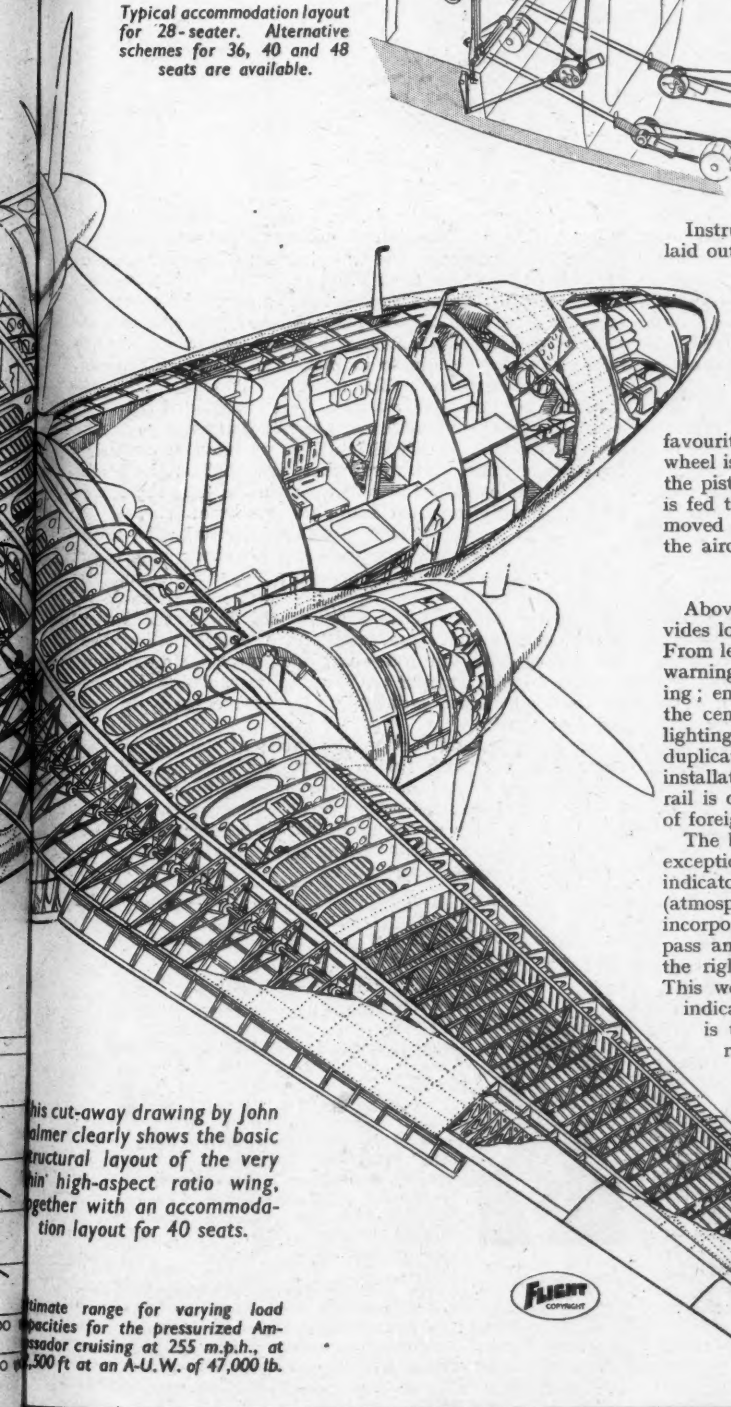


*Typical accommodation layout for 28-seater. Alternative schemes for 36, 40 and 48 seats are available.*



*Details of control transmission linkage showing rod- and crank system to racks and pinions for driving the "step-up" cable drums. The octagonal casings enclose the auto-pilot servo motors.*



*his cut-away drawing by John almer clearly shows the basic tructural layout of the very hin high-aspect ratio wing, ogether with an accommodation layout for 40 seats.*

*timate range for varying load pacities for the pressurized Ambassador cruising at 255 m.p.h., at ,500 ft at an A-U.W. of 47,000 lb.*

Instrumentation and auxiliary service controls are neatly laid out and, for the latter, come readily to hand. On the captain's left a "shelf" is furnished with inter-comm., V.H.F. controls, etc., identification light, navigation light and windscreen wiper switches and, forward, the control box with its inverted pistol-type hand grip for actuating the hydraulically steerable nosewheel. This new feature has been found to operate very satisfactorily during the extensive taxying trials and should become a favourite with pilots. In normal circumstances the nosewheel is a conventional self-centering castor unit but, when the pistol grip control is tilted forward, hydraulic pressure is fed to the strut and, accordingly, as the control grip is moved to left or right, so does the nosewheel turn to steer the aircraft to port or starboard.

### Lights and Switches

Above the main instrument panel a "scuttle rail" provides location for a battery of tell-tale lights and switches. From left to centre they are: take-off signal; undercarriage warning; oil dilution; airscrew feathering; fire extinguishing; engine priming, ignition booster; and magnetos. In the centre of the rail are the instrument panel infra-red lighting rheostat switches, and from centre to right are duplication switches and warning lights for the starboard installation. The final position at the extreme right of the rail is occupied by tell-tale lights warning of the presence of foreign matter in the engine sumps.

The blind-flying panel for each pilot is similar, with the exception that only the captain is given a beam-approach indicator, the second pilot instead having an absolute (atmospheric) pressure gauge in its place. Each b.f. panel incorporates a repeater indicator for the Smith gyro-compass and in addition—somewhat curiously—below and to the right of the captain's panel is the master indicator. This would appear to be superfluous in that the master indicator should be provided for whichever of the pilots is to act as navigator. As it is, each pilot has his repeater and the master indicator is more or less in the centre.

Between the blind-flying panels in the centre of the board are the engine instruments, comprising a two-finger boost gauge and r.p.m. indicator; duplex oil pressure; oil temperature; fuel pressure, and cylinder-head temperature gauges; torque meters (one for each engine); individual fuel and oil gauges for the port and starboard capacities; and, similarly, port and starboard tankage and fuel-flow meters.

Strip-type panels below each blind-flying panel respectively incorporate,

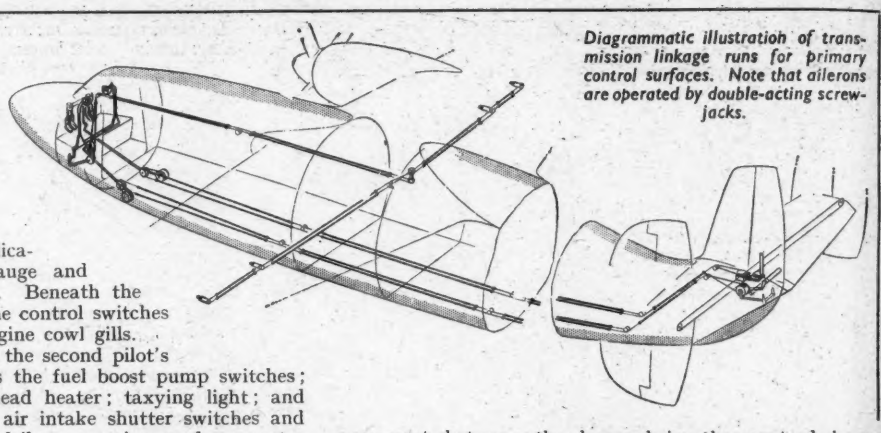
## Airspeed Ambassador.....

for the captain, an absolute atmospheric pressure gauge; radio altimeter and setting control; and for the second pilot, a flap position indicator; undercarriage position indicator; air temperature gauge and hydraulic pressure gauge. Beneath the engine instruments are the control switches and indicators for the engine cowl gills.

The starboard shelf on the second pilot's right hand accommodates the fuel boost pump switches; navigation light; pitot head heater; taxying light; and metal detector switches; air intake shutter switches and indicators; and charge failure warning and generator isolator switches. Behind these are the igniter warning lights, overheat warning lights and switches for the surface combustion heaters which supply the warm air to the cabin and the wing and tail surface de-icing ducts; adjacent is the airscrew de-icing control, the VHF and intercomm selectors being fitted at the extreme rear of the shelf.

The pedestal-type throttle box is a neatly designed unit, all the control levers being comfortably within the reach of both pilots. Throttles and engine speed controls are mounted side by side on the top, but the present "natural sense" operation for reverse thrust braking is to be modified in the future owing to difficulty in the throttle linkage loads for the airscrew braking application; this, however, is still the subject of argument. The elevator trim control is mounted on the port side, and the aileron and rudder trim wheels are on the rear of the box. Above these, but beneath the throttle quadrants, are the undercarriage and flap controls. A friction damper is mounted on the starboard side. Integral locks for the primary control surfaces are built-in and are operated by a lever in the pedestal base. This is held in the "locked" position by a spring tape, the reel of which is mounted above the captain's windscreen so that the tape cuts his line of sight and there is thus no possibility of attempted take-off with control surfaces locked. In addition to locking at the surface end of the control transmission linkage, a second lock is incorporated for rudders only at the cockpit end.

As briefly noted in our structural description of the Ambassador, the primary control system is quite unique in its use of stepped-up intermediate cable travel. Each pair of rudder pedals is hung from an individual gear box,



*Diagrammatic illustration of transmission linkage runs for primary control surfaces. Note that ailerons are operated by double-acting screw-jacks.*

movement between the boxes being harmonized by a balance linkage. The control columns terminate at elbow cantilevers which carry the three-quarter wheels for aileron control, transmission from the wheels being by a system of rods and bell cranks housed inside the control columns. Input motion from the rudder pedals, aileron wheels and elevator columns is transmitted by push-pull rod and crank linkages, which terminate in racks meshing with pinions to drive cable pulleys. The latter are of relatively large diameter so that a linear ratio of 5 : 1 is provided between rack movement and cable movement; that is to say, 1in movement of the rack will result in 5in movement of the appropriate cable. Twin sprockets mounted on the same shafts as the cable drums and rack pinions take the drive from adjacently mounted auto-pilot servo motors.

The main lengths of control transmission take the form of tie-rods, which are interspersed with short lengths of cable for engagement with fair-lead pulleys where changes of direction occur. The object of the step-up in cable is to render cable stretch uncritical and to permit wider tolerances of temperature variation. It further allows the use of very light, thin rods and cables, since the maximum tensile load which can be put into the transmission (limited by the load on the surface) is very low, actually of the order of 120 lb.

For elevators and rudders the cables at the rear of the fuselage engage with similar drum and rack and pinion arrangements to step down linear motion in transmission to the control surfaces. For aileron actuation the magnified cable travel is not reduced, since the cables are taken out to double-acting ball-bearing screw jacks in the wings whereby the surfaces are moved.

## ROLLS-ROYCE CHAIRMAN'S SPEECH

IN his statement on the occasion of the 40th Ordinary Annual General Meeting of the stockholders of Rolls-Royce, Limited, on Wednesday, July 16th, Captain E. C. Eric Smith, the chairman, said that while a reduction in the aero turnover was only to be expected the company was still receiving valuable orders and contracts from government departments, and the works had been kept extremely busy. Every effort was being made to increase the export trade and the efforts of an expert force travelling throughout the world had been crowned with considerable success. The chairman added: "It should be realized that this foreign business entails considerable responsibilities. We cannot merely sell our product to a buyer overseas and leave it at that. Contact has to be maintained to ensure that the best results are achieved, that the product is properly understood, and that it is fairly employed in circumstances within its capacity."

Capt. Eric Smith continued: "A considerable demand has arisen for licences to manufacture various models of our engines. This is all to the good as it reflects the appreciation of the merits of what we make, but it likewise calls for extensive initial education and continuing contact with the licensee to keep him abreast of developments."

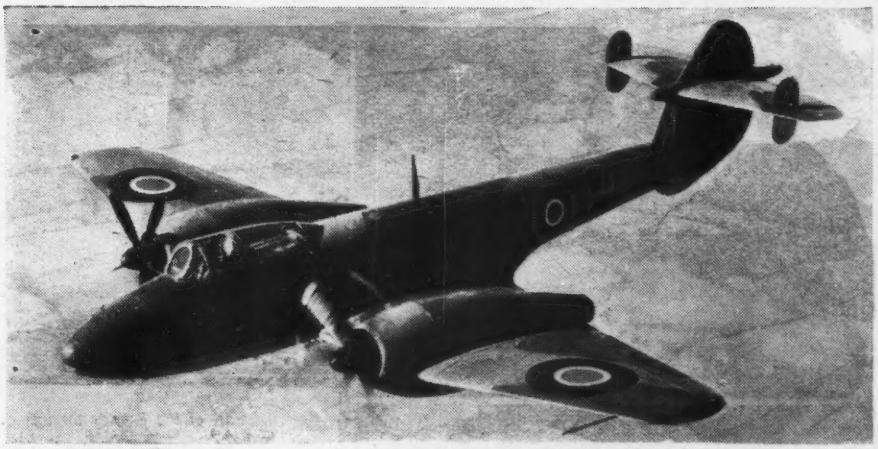
Of gas turbine engines he said that its extensive study and experience had placed the company in a favourable position, but others had not been slow to take up the construction of engines in this class.

## TO TEST THE HERMES II

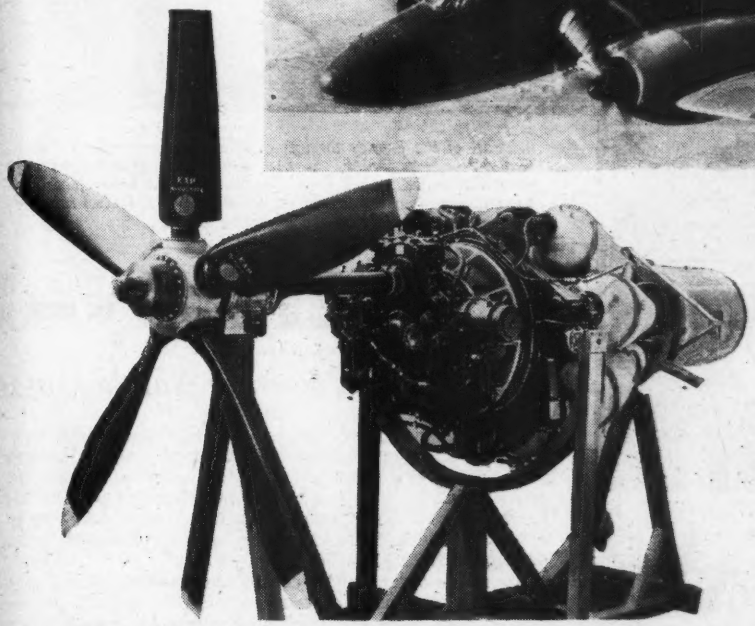
*S/L. Hazelden.*

WITHIN the next few weeks S/L. Hazelden will be test-flying the Handley Page Hermes II. It will be his first big job as chief test pilot in charge of the Handley Page flying department, a position to which he was recently appointed.

S/L. Hazelden flew with the R.A.F.V.R. prior to the war and, on mobilization, spent three years with Bomber Command's 44 and 83 Squadrons. He completed two operational tours, was twice awarded the D.F.C., and flew on the three initial thousand-bomber raids. S/L. Hazelden went to Boscombe Down on the first Test Pilots' course and was appointed to the heavy aircraft testing squadron in early 1944. Among other aircraft, he carried out test-flying on Halifax III and VI bombers. When war ended he was placed in charge of the civil aircraft testing section at Boscombe Down, and undertook research into civil aviation requirements. In the recent Birthday Honours S/L. Hazelden was awarded the King's Commendation for valuable service in the air.



*The Trent is basically a Derwent II modified to drive an airscrew. The reduction gear built into the accessory casing is seen to be extremely compact, and the ratio is 0.141 : 1. The power output is 750 s.h.p. plus 1,000 lb jet thrust*



*Two important characteristics of the Meteor with Trent airscrew turbines are its rapid acceleration should it be compelled to overshoot when about to land, and its good single-engine performance. In this new aerial view the five-blade Rotol airscrew of the starboard engine is seen to be feathered.*

## *Rolls-Royce Airscrew Turbine Development: Flight-Testing the Trent-Meteor*

# "KNOW-HOW" FROM THE TRENT

ALMOST two years have now passed since W/C. Hayworth, Rolls-Royce assistant chief test pilot, made the first flight in the Trent-Meteor, and since then this interesting experimental aircraft has provided the Rolls-Royce Company with a great deal of invaluable information on airscrew-driving turbines generally, and, in particular, on reduction gear and airscrew problems. It was, in fact, the investigation of these matters without the delay which would have been occasioned by awaiting the production of an entirely new engine that led to the development of the purely experimental Trent airscrew-turbine combination.

Investigation first began when the Welland was tested for shaft-horse-power. The tests are of historic interest in being the first b.h.p. tests ever made with an aircraft gas turbine. The Trent engine, which represents the next stage, is a Derwent H redesigned at the front end to take a reduction gear, and this hybrid unit which originally gave 2,200 lb thrust was first tested with reduction gear but without airscrew in May, 1944. In March of the following year it was hangar-tested with a five-blade Rotol airscrew, and the first historic flight, mentioned above, was made in September, 1945. Its first public appearance after many hours of flight development was at the Derby International Air Rally on June 21st last.

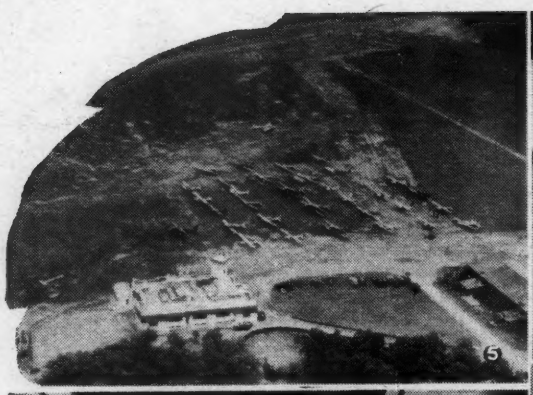
Of the 1,000-plus hours of test running to date over 400 have been completed with Rotol airscrews fitted, and the effect of an airscrew hub on air intake efficiency and the suitability of various reduction gear designs, are two typical examples of the development work undertaken. The reduction gear of the Trent consists of three layshafts arranged to form a double train of gears driven from the compressor and having a final simple spur reduction gear to the airscrew. The overall reduction ratio is 0.141 : 1. Plain spur-type gears were used in the early designs, but due to vibrations set up as a result of the high contact speed of the gear teeth coinciding with the natural frequency of the tab washers in the gear-locking devices, fatigue of the washers occurred followed by failure of the gear. Redesign to provide additional strength and special balancing of the drive seems to have overcome this trouble, and the present gear has proved entirely dependable after many hours of test-bed running.

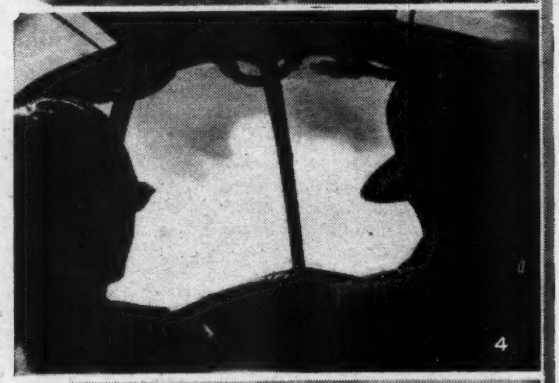
Two Trents were fitted in a slightly modified Meteor Mk I for flight trials. The undercarriage was stiffened up and the legs lengthened to give an additional six inches of ground clearance for the 7ft 7in five-bladed airscrews. The proportion of the shaft power to the jet thrust is now 750 h.p. to 1,000 lb.

### Airscrew and "Throttle" Controls

The first flight trials were made with independent controls for the throttles and constant-speed units, the intention being to find out what degree of co-ordination would be required between their respective movements. However, it was found that a very great degree of skill was required to operate the separate controls and that very rapid changes in thrust were encountered amounting in extreme cases to negative thrust. As a result of these unsatisfactory qualities the Trent-Meteor was temporarily grounded, and upon resumption of development very small airscrews 4ft 10½in in diameter absorbing only 350 h.p.

(*Concluded on page 82.*)





*4. Part of the journey through cloudland, as seen from a back seat of Proctor V, G-AIAF. 5. Seen during a circuit of the airfield on arrival at Deauville's airport, St. Gatien. 6. Just before the touch-down, when landing on the 1,000 yd. Marston steel runway laid by the liberation forces.*

# Air Rally–Duv

## *Record Number of Brit*ilors

IN describing the many popular flying events which have so far taken place this year, *Flight* has endeavoured to give readers a word picture of the aircraft, events and pilots taking part and, where appropriate, to add to the technicalities a background of social interest. The story of the Deauville Rally, however, would lend itself better perhaps to the style of *Vogue*.

Air rallies organized by continental countries wishing to encourage the visits of tourists and holiday-makers are often simply week-end parties at which the guests arrive by air. After landing one probably does not see the aircraft again until the time comes for departure, and after some "rallies" the sight of the aircraft or, in fact, anything on wheels except perhaps a bed, is hardly a welcome one to a proportion of the contestants.

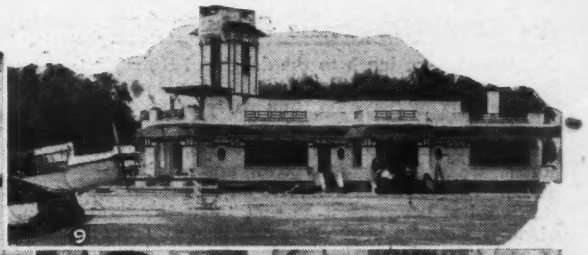
Deauville is definitely a show place during its short mid-summer season, and it is fortunate in that there are no war scars visible on its first-class hotels or excellent casino, and there is a fine, sandy beach. Rally guests on July 12th-14th (225 members or associate members of the Royal Aero Club) were accommodated at the Royal Hotel on the sea front, and the principal host was M. F. Andre, president of the Society of Hotels and Casino at Deauville. A

*3. Alex. Duncan dismounts at Lympne to present his "carnet de passage en douanes"*

*2. Mr. and Mrs. David Brown, of tractor fame, and Mr. Wrigley repack their baggage at Lympne.*

*1. At Elstree. Entrants arriving by car and preparing their aircraft.*

*13. (Right) British aircraft on Deauville (St. Gatien) airfield.*



7. *A French airfield official, carrying a Union Jack, adroitly parks the aircraft in neat rows.* 8. *Visitors deplane, in this case Mrs. Denman, Mrs. Harben and S/L Porteus from Derby.* 9. *The attractive airport building at St. Gatien.*

# Duville Style

## Brivitors *Fly to French Resort*

number of ladies were present, but "stags" unfortunately preponderated. The week-end programme included a ball at the Casino on the Saturday and Sunday evenings, when the food was excellent and the two bands were well worth listening to—and dancing to if a square inch of floor space could be found. A high-spot of each evening's entertainment was a firework display. Curtains were drawn back from the huge windows of the ball-room, lights were switched off and a remarkably beautiful effect as of a "snowstorm" of gold and silver fire was produced outside.

On the Sunday at noon a small reception was given at the Trouville swimming pool (Trouville is to Deauville as Margate is to Cliftonville) by the French-English Society, when the first and second mayors welcomed their visitors, and the Duke of Fitz-James addressed the guests, saying that aircraft and aviators had virtually overcome the world barriers of time and space. A small party was

10. *The reception committee busy inside the airport building, welcoming guests from England.*

11. *During banquets, the lights were extinguished and a rain of silver fell from fireworks hanging outside the windows.*

12. *The week-end over, guests wait outside the Hotel Royal for transport to the airfield.*

## Air Rally—Deauville Style . . . . .

able to go on for lunch to the delightful Hotel du Golf on the hills behind Deauville. Between meals and receptions the members of the Aero Club party amused themselves variously with swimming, shopping and the casino tables. Some visited the races (*au trot attelé or monté*). Trotting horses, while looking attractive, appear somewhat frustrated. One might as well have an air race in fine pitch !

A word of praise must be said about the organization, which was chiefly in the able and long-suffering hands of Colonel R. L. Preston. Lympne and Gatwick authorities also cheerfully put in some overtime to cope with the unusual flow of private aircraft.

St. Gatien airfield, which is a mile or two outside Deauville, has two metal-strip runways. On arrival, the reception committee was very helpful, and first impressions on landing at Deauville were recorded as part of an arrival competition. A trophy, the figure of an airman, was presented to Mr. Alex Duncan during the first evening's ball, for the impression judged to be best. On landing in a Proctor he said that "his aeroplane always seemed to go best when heading for Deauville."

The Shell, B.P. and Intava authorities were most helpful and efficient as always, and refuelling and parking, as well as the checking of passports, were all dealt with quickly and efficiently. It was not clear what the French Customs official thought English airborne visitors might wish to smuggle into France, but one gained the impression that the tiresome poking around in every suitcase and small bag was prompted as much by inquisitiveness as by efficiency. In contrast, the British Customs on return completed their work pleasantly and quickly, and the Customs procedure, control and refuelling at Lympne were all very well organized.

Apart from the week-end entertainments, those who went to Deauville undoubtedly enjoyed the flight in fine weather down the French coast, and the miles of deserted sand dunes provided an ideal opportunity for some legal low-flying practice. Take-off for return on Monday morning was delayed by a blanket of low cloud, which persisted over the whole coast line until midday. However, by evening almost everyone was back at their home airfield, and only one mishap—a forced landing, fortunately without injury—was reported.

# Air Accident Investigation

## *The Views of the Guild of Air Pilots and Navigators*

WE have received from the Court of G.A.P.A.N. the following statement: A great deal of publicity has recently been given to enquiries into a series of aircraft accidents. It is well known that, as a result of general disquiet, the Minister of Civil Aviation instructed that certain enquiries should be held in public Unfortunately, the results even of public hearings have not been greeted with general enthusiasm. It is felt, therefore, that the time has come for a pronouncement of the Guild's position in this matter.

Considerable popular tribute has been paid to the B.A.L.P.A. for publication of a criticism of the findings of certain enquiries. As a corollary, a certain amount of displeasure has been vented on the Guild for its apparent inactivity. *The fact is that the Guild has been far from idle.* It did not consider that a public pronouncement which, in the nature of things, could not be authoritative would serve any useful purpose. It was felt that a better plan would be to make a private approach to the various authorities concerned in an attempt to clarify the position and, if possible, to make recommendations for improvement.

As a result, a great deal of information has been brought to light which materially alters the first reaction to the published findings. In order that reasons for this may be properly understood it will be as well to give a brief outline of the procedure involved in accident investigation.

There has been considerable clamour for judicial investigations into aircraft accidents. Let us examine the implications of such a course. In order that a judicial hearing may have any value, facts which relate to the accident in question have to be collected and related to each other in proper sequence. This is precisely the function being carried out by the Accidents Investigation Branch and in the belief of the Guild it is being thoroughly and competently carried out A judicial enquiry into a specific accident would, therefore, have to base its finding on the facts submitted by the Accidents Investigation Branch. The additional powers vested in the Court by reason of its judicial authority would, it is true, enable witnesses to be subpœnaed but would involve the employment of counsel and in other respects would lead to a large outlay of public money. While such a procedure is justified under exceptional conditions—say when a difficult point of law is in question, or when legal powers are required to obtain essential evidence from unwilling witnesses—as a general rule it would be rather like setting up a separate Ministry to deal with licensing of aircrews. In other words, the machinery is far too heavy for the work to be done.

While, therefore, the Guild considers the present fact-finding enquiries held by the Accidents Investigation Branch are entirely adequate in most cases, some modification in the composition of the Court and in the method of publishing findings would be an advantage In the first place, no matter what degree of integrity is possessed by the staff of a department, it is unfair to them and not conducive to public confidence to place them in the position of possibly having to censure their *de facto* superiors. While it may be true that the Ministry of Civil Aviation only administers the Accidents Investigation Branch and does not interfere in any way with its operation, there can be no doubt that any connection whatever between the Air Ministry or Ministry of Civil Aviation on the one hand, and the Accidents Investigation Branch on the other, must lead to difficulty. The first point, therefore, is that the Accidents Investigation Branch should be entirely dissociated from either of the Ministries connected with the Air. It is suggested that it could best be placed directly under the Treasury.

It is probable that results more readily understood by the layman would be obtained if the Chairman of an enquiry were an Officer with legal training, qualified to assess evidence and handle witnesses. It cannot be too strongly stressed that this suggestion is in no way a criticism of the present Director and his staff, but is designed to promote public confidence, and to relieve the Director of duties which are extraneous to his normal functions. For the same reason it should be at the discretion of the Court to take evidence on oath and power should be given to the Chairman to subpœna witnesses

The report made out by the Director of Accident Investigations is compiled for submission to the Minister. When the Minister decides it should be published, this is done, but none of the evidence given at the enquiry is available for public perusal. The only transcript is the much-abridged account published in the newspapers. For example, in a recent enquiry the first day's evidence filled 74 pages of foolscap. None of the daily papers which were subsequently consulted gave more than one column of 4in to 5in to a report on the proceedings. The only points stressed dealt with a high-light from the dramatic point of view.

One of the most fruitful sources of misunderstanding has been in the form of findings. This form has already been modified. Up till recently the practice has been to express the findings as a primary cause, followed by secondary or contributory causes. When evolving the present procedure of fact-finding enquiries it was decided that for practical purposes the primary cause was not a satisfactory method of expression. Not infrequently the primary cause could be traced back through the years and the assumption that, if necessary, blame could be attributed to the originator of the primary cause, became legally untenable. For this reason it was decided to state the "immediate cause," followed by secondary or contributory causes.

As in 99 cases out of 100 the pilot must have something to do with the immediate cause, the general impression is that the pilot is almost always held to blame, because the "immediate cause" comes first in the findings. In fact this may be very far from the truth and very far from the intention of the finding.

In many cases one of the contributory causes can be termed the principal cause. On occasion action has been taken by the Minister on this basis. It is suggested, therefore, that the possibility of stating the finding as a "principal cause," followed by contributory causes, should be examined.

## "KNOW-HOW" FROM THE TRENT

*(Concluded from page 79)*

were fitted for a start. The jet pipe diameter was also decreased to raise the jet thrust component to 1,400 lb. This near pure jet arrangement enabled flight trials to continue and a satisfactory single-lever control to be developed. The C.S.U. is now automatically reset to control at a lower speed when the turbine speed is reduced.

Over 80 flying hours have so far been completed by the Trent-Meteor. Mr. Eric Greenwood, of the Gloster Company, has flown it, and W/C. A. McDowell, late commander of No. 616 Squadron (first jet squadron to go into action) and now one of Rolls-Royce's test team, has recently taken over the flight development work. There is, of course, no intention of putting the Trent power unit into production, but the practical experience gained at this very early stage, both on the test-bed and in flight, is being applied to Rolls-Royce airscrew turbines which are now being developed and are scheduled for production. No details of new Rolls-Royce airscrew turbines may be mentioned, but two units, the Dart and the larger Clyde, are known to have been running for some time.

# HERE AND THERE

*PAINTED LADY: The Percival Merganser shown in this new photograph with its first coat of paint. Built specially for feeder line services, the Merganser seats 5-8 passengers and is powered by two Gipsy Queen 51 engines. The Merganser was reviewed in "Flight" May 22nd.*

## Australian Settlers by Air?

AN air immigration scheme for prospective Australian settlers (similar to the Ontario scheme mentioned in these columns, *Flight*, July 10th), may be introduced soon if Mr. Arthur Calwell, Australian Minister for immigration, approves of a plan put forward by a San Francisco aircraft company to fly 1,000 British immigrants a month to Australia. The company plan to use ten D.C.4's for the operation. Mr. Calwell, commenting on the suggestion, said: "I am most interested and will go into the offer thoroughly." Mr. Calwell is leaving for the United States in a few weeks' time.

## Paris Visit

A BRITISH delegation made up of members of the Federal Union, the Parliamentary Federal Group and the United Europe Committee left Croydon last Thursday for a three days' visit to Paris in a Dakota chartered from Westminster Airways. This charter company has been engaged for some time flying on special charters to Europe and farther afield for Government departments. Members of the Foreign Office in particular have flown on several occasions in the company's aircraft. Sometimes known as the M.P.s' charter company owing to the number of Members of Parliament on the board of directors, Westminster Airways are expanding, and, as announced last week, have recently taken delivery of a Dove.

## Versailles Programme

THE St. Cyr Air Rally takes place at Versailles on Saturday and Sunday, August 2nd and 3rd. Entrants for the rally will land at Toussus-le-Noble and will be accommodated in hotels in Paris. The rally, which will be international in character, has been organized by the Aero Club de Versailles, and a programme which incorporates aircraft competitions and first-class entertainment has been planned for the visitors.

## Newfoundland Contract

THE Photographic Survey Co., Ltd., of Toronto, are to carry out a survey for the government of Labrador of an area approximately five thousand square miles in the neighbourhood of Lake Melville and Grand Lake, Labrador. Particular attention will be paid to timber resources. The survey will involve the determination and establishment of ground control points, aerial photography, the preparation of maps and the supply of a forest inventory. Work is expected to be completed and photographs, plans and inventory made available by December, 1948.

## Griffith Brewer 80

YESTERDAY Mr. Griffith Brewer joined the octogenarians. It would not be quite true to say that he celebrated his 80th birthday, for he is in hospital, recovering from an operation, but we are glad to say that he is making good progress, and on behalf of the many *Flight* readers who know him and of those less fortunate who only know of his wonderful life in aviation, we wish Mr. Brewer "Many Happy Returns of the Day." He received a large volume of birthday messages from many parts of the world.

## Turning on the Heat

AN order for a supply of heat-treatment equipment for the aircraft engine factory of the Turk Hava Kurumu, Ankara, which is to manufacture de Havilland Gipsy engines, has been received by Wild-Barfield Electric Furnaces, Ltd. The plant consists of modern electric furnaces of the "heavy hairpin" type for general heat-treatment. Vertical forced air circulation furnaces with the patented charge progress recorder are to be used for the tempering of steel parts, and the heat-treatment of light alloys, and low temperature electric ovens are being supplied for paint drying and other applications.

## Wheels Within Wheels

TWO four-seater private aircraft, a Fairchild F.24 and a Beechcraft Bonanza, recently flew the Atlantic from New York to Amsterdam—without wings! They formed part of the cargo of the K.L.M. trans-Atlantic freighter and are the first of nine private aircraft to be delivered this way to purchasers in Europe.

## Discrepancies

A REPORT on the disposal of surplus aircraft by the Canadian War Assets Corporation is being studied with some concern by Canadian Members of Parliament. From figures available there appears to be some discrepancy in the pricing of disposable aircraft. An example is shown in a statement by the Canadian government that its price for Mosquitoes to foreign governments is approximately $15,000, and yet the same report shows that three Mosquitoes which were flyable or capable of reconditioning have already been sold for $1,800 each.

*TWO-MOTOR ROTOR: The U.S. Army Air Force's largest helicopter, the Kellet XR-10 shown here on its first test flight, is claimed to be the first twin-engined transport helicopter in the world. The XR-10 carries a crew of two, and ten passengers and has a cruising speed of 90 m.p.h. Construction is all-metal.*

## HERE AND THERE

Still further complication in the Mosquito price is provided by eight machines sold for commercial salvage, bringing only $25 each! Two Flying Fortresses, in flyable condition, were sold by the War Assets Corporation for $3,500 and $2,500 respectively. Hurricanes brought $50 and some 167 of them sold for commercial salvage at an average price of $57. Twelve flyable Venturas were sold for an average price of $187 to buyers who paid anything from $50 to $200 for their respective aircraft.

### Melting the Ice

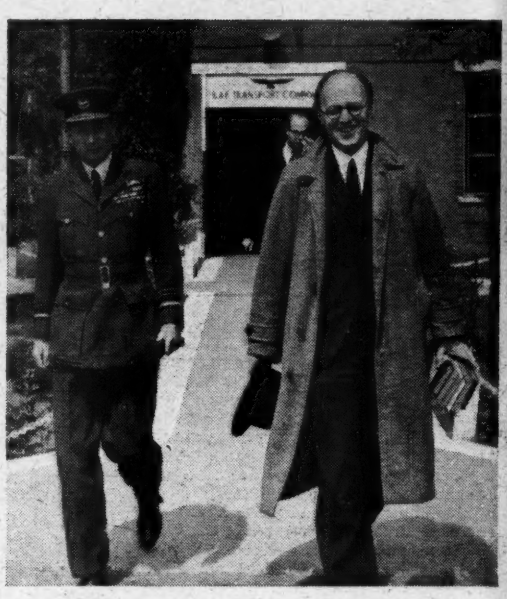
A NEW patent, which can be expected to arouse considerable interest, has recently been granted to the Fairey Aviation Co. for airscrew de-icing equipment. Briefly the device, which was invented by Capt. A. G. Forsyth, at Hayes, consists of an electric generator housed inside the airscrew hub, to heat the airscrew blades. The whole unit is self-contained and isolated from the pitch-changing mechanism to prevent oil permeating into the generator and distributor. It eliminates the need for muffs, slinger rings and de-icing fluid.

### U.L.A.A. Development

NEGOTIATIONS over the re-issue for ultra-light aircraft types of the pre-war Permit to Fly has resulted in the suggestion by the A.R.B. that a new category C. of A. might be considered. Following on this information the Ultra Light Aircraft Association has put forward a number of suggested C. of A. concessions and proposals, which are now being considered by the A.R.B. Although the U.L.A.A. still hopes to obtain Permits to Fly, it does at the same time realize that a special C. of A. category for ultra-light aircraft would be very useful in allowing ultra light aircraft enthusiasts to fly internationally.

### Midget

WHAT is claimed to be the world's smallest all-metal aircraft has been designed and built by a group of Lockheed pilots and engineers. The machine, a tiny monoplane weighing only 800 lb and named the "Cosmic Wind," will be entered in the American National Air Races which take place in Cleveland this September.



*FAREWELLS: Lord Pakenham left Northolt last week en route to Germany where he is responsible for the British Zone. He is seen here in company with Air Marshal Sir Ralph Cochrane, C.-in-C. Transport Command, before departure.*

## News in Brief

Miss Betty Cameron has been appointed sales manager of Pytram, Ltd. During the war Miss Cameron handled all the aircraft and industrial contracts with which the firm were engaged.

* * *

The British Scientific Instrument Research Association have opened new laboratories at "Sira," Southill, Elmstead Woods, Chislehurst, Kent.

* * *

The city of Amsterdam has approved plans for the improvement of Schiphol Airport. In addition to extending runways, the airport authorities are to construct new hangars, passenger terminal, administrative building, and an hotel.

David Brown Machine Tools, Ltd., is the new title of Muir Machine Tools, Ltd., Britannia Works, Manchester.

* * *

At a recent meeting of the board of directors of James Booth and Co., Ltd., Birmingham, Mr. D. E. Bunce was appointed secretary of the company on the retirement of Mr. F. Franklin, who will take over the position of controller.

* * *

By decision of the Council of Ministers of the U.S.S.R., Soviet Air Force Day will be celebrated this year on August 3rd.

* * *

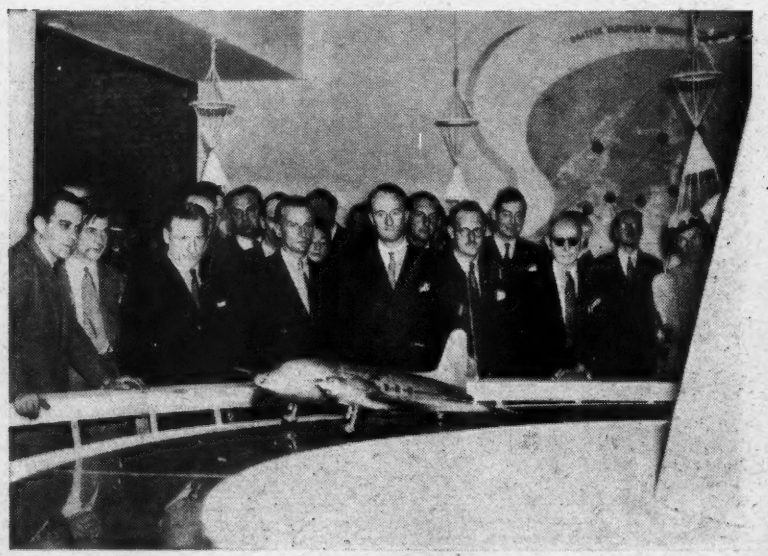
The President and Council of the Royal Aeronautical Society entertained to dinner A.V-M. E. W. Stedman, F.R.Ae.S., and Colonel Carrie, Director of Defence Research, Royal Canadian Air Force, in the offices of the Society on Wednesday, July 16th, 1947.

* * *

Mr. Cyril F. Uwins, O.B.E., A.F.C., whose appointment to the board of directors of the Bristol Aeroplane Co., Ltd., we announced recently, becomes divisional managing director (aircraft division). Mr. G. S. M. White relinquishes the position of divisional managing director (aircraft division) and Mr. W. R. Verdon Smith relinquishes the position of head office director, both being appointed joint assistant managing directors of the company in succession to the late Mr. Herbert J. Thomas. These appointments take effect immediately.

* * *

Returning from a business trip to the Union of South Africa, Northern and Southern Rhodesia and Kenya, Mr. R. F. Hatto, sales director of S. Wolf and Co., Ltd., manufacturers of Wolf Portable Electric Tools, expresses the opinion that these markets deserve much more attention than is being paid to them at present by British manufacturers. Mr. Hatto emphasizes the help given him by H.M. Trade Commissioners in the countries concerned.



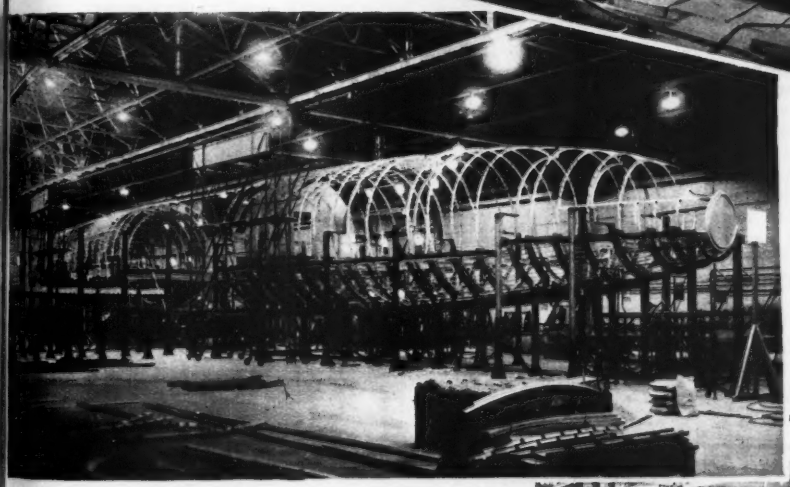
*MODEL DISPLAY. This flying model Vickers Viking attracts most attention at the "Fly B.E.A." exhibition opened last week at Charing Cross Underground Station. Theme of the display is an overnight journey to the Continent. The exhibition will remain open on weekdays 10 a.m.—8 p.m. until Saturday, August 9th. Two B.E.A. traffic officers are in attendance.*

# BRISTOL 167

## *Planning of the Interior: First Pressure Tests*

*Putting finishing touches to the main fuselage shell. At its widest point it is 16ft in diameter, there is thus ample space for two decks.*

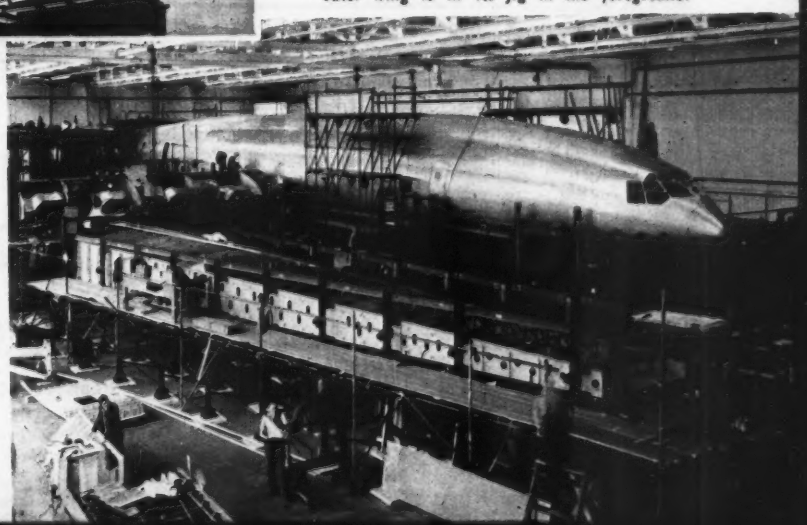
*(Below) One of the early progress photographs of the prototype taken in February 1946 shows the fuselage skeleton just beginning to take shape.*



PROGRESS with the Brabazon, first prototype of the Bristol 167 series, is very satisfactory. This fact can be judged from the monthly progress photographs issued by the Bristol Company; and visits from time to time to the huge constructional shop at Filton give adequate confirmation that this progress with the airframe is more than skin deep. The power units are also equally advanced.

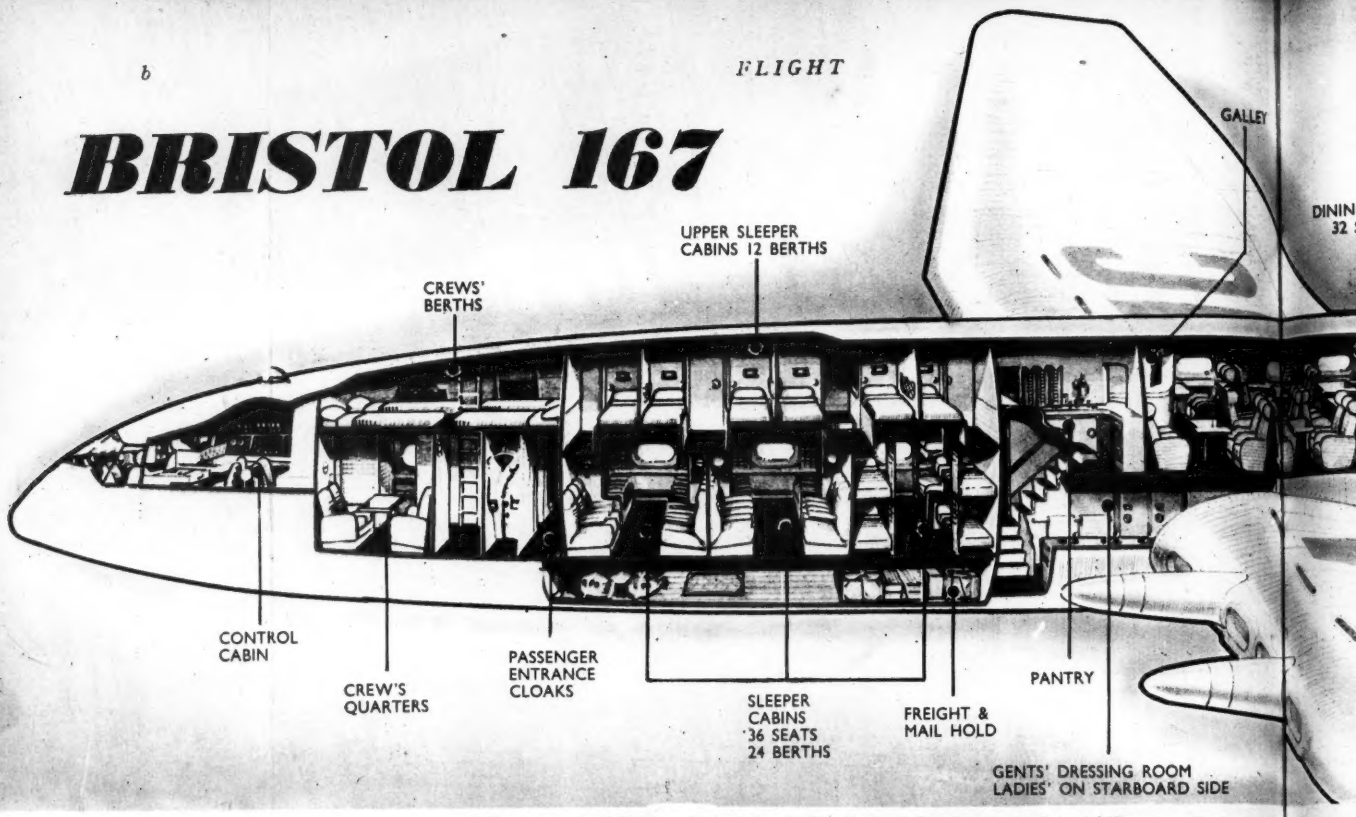
Following the very complete descriptions of the airframe, the Centaurus power plants and their co-axial airscrews, which appeared in earlier issues of *Flight*,* important features of more direct interest to the passenger are now beginning to come into the picture. An interior plan prepared to meet B.O.A.C. requirements is illustrated in the special sectional drawing on the next pages. This arrangement of cabins, seating, bunks, etc., may be regarded as final, but the ultimate styling and colours of the B.O.A.C. machines are now being worked out

*(Below) As the Brabazon appeared at the beginning of this month. The fuselage is almost ready for preliminary pressure tests and the tail unit and inner wings are attached. An outer wing is in its jig in the foreground.*



* Structure—*Flight*, March 27th and April 3rd. Power Plants and Airscrews—December 26th, 1946.

# BRISTOL 167




*The largest landplanes to be built by the British aircraft industry, the Bristol 167 series, of which the fir is to be c New York and return. In this special cutaway drawing prepared by the B.O.A.C. design office may be seen the ger styling or colour schemes, plans for which are now in preparation. The prototype 167 is scheduled to fly ear next year, a*

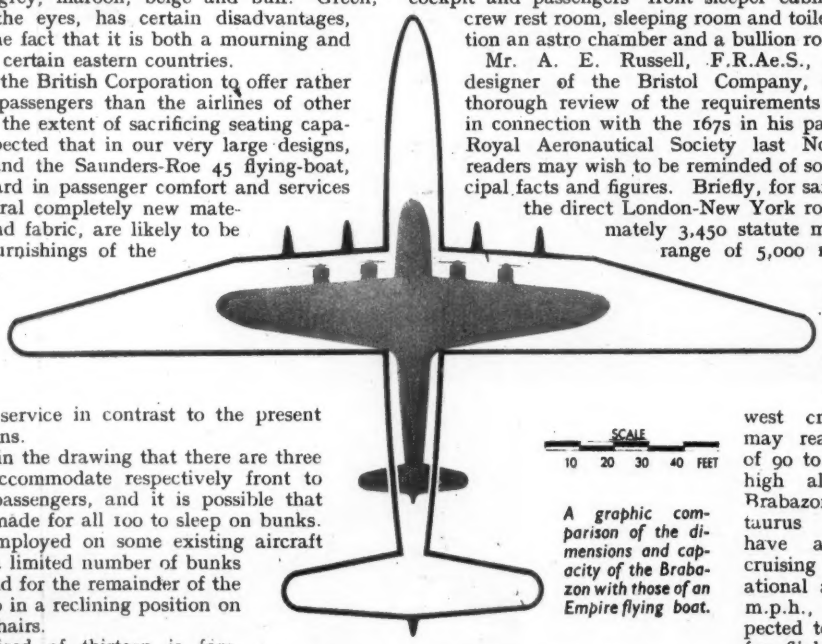
by Mr. Lonsdale-Hands following a period of special research here and in America. The final colours will conform with interiors already approved for and in use on other aircraft in the Corporation's fleet, these being principally blue, grey, maroon, beige and buff. Green, while restful to the eyes, has certain disadvantages, among which is the fact that it is both a mourning and a sacred colour in certain eastern countries.

It is a policy of the British Corporation to offer rather more comfort to passengers than the airlines of other countries, even to the extent of sacrificing seating capacity, and it is expected that in our very large designs, the Bristol 167s and the Saunders-Roe 45 flying-boat, a new high standard in passenger comfort and services will be set. Several completely new materials, structural and fabric, are likely to be included in the furnishings of the 167s and by comparison with present day standards on world airlines the aim is to provide luxury club service in contrast to the present "picnic" conditions.

It may be seen in the drawing that there are three main cabins to accommodate respectively front to rear 36+32+32 passengers, and it is possible that provision will be made for all 100 to sleep on bunks. The alternative employed on some existing aircraft is, of course, for a limited number of bunks to be provided, and for the remainder of the passengers to sleep in a reclining position on their adjustable chairs.

A crew comprised of thirteen is foreseen, and in this number are included at least five stewards who will serve meals and attend to passengers' requirements.

The accommodation is arranged mainly on one deck level, but the 32-seat dining cabin, lounge, bar, galley and servery are accommodated over the wing centre section at a half-deck higher level. Below these compartments are the dressing-rooms and toilets. In the main rear passenger cabin, provision is to be made for a cinema projector and radio for the passengers' entertainment, and a flight progress chart will indicate the aircraft's position throughout the whole Atlantic crossing. Below the two main cabin decks are holds for luggage and mail. Crew quarters are grouped in the nose of the aircraft, between the pilots' cockpit and passengers' front sleeper cabin. There is a crew rest room, sleeping room and toilet, and in addition an astro chamber and a bullion room.

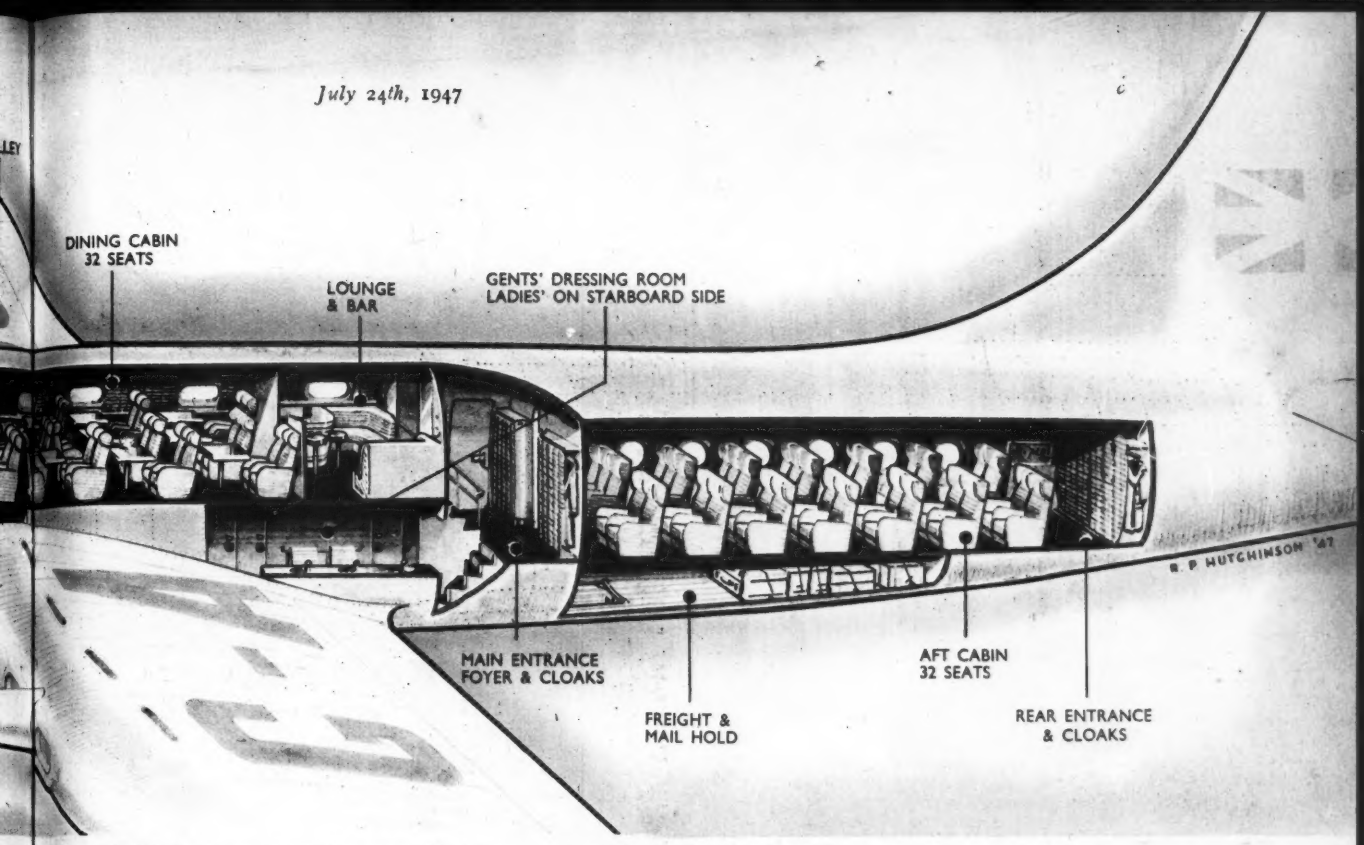



*A graphic comparison of the dimensions and capacity of the Brabazon with those of an Empire flying boat.*

Mr. A. E. Russell, F.R.Ae.S., chief aircraft designer of the Bristol Company, made a very thorough review of the requirements and problems in connection with the 167s in his paper before the Royal Aeronautical Society last November,* but readers may wish to be reminded of some of the principal facts and figures. Briefly, for safe operation on the direct London-New York route of approximately 3,450 statute miles, a still-air range of 5,000 miles at about 20,000ft. is required. This makes safe allowance for the unfavourable winds on the east-to-west crossing, which may reach a velocity of 90 to 100 m.p.h. at high altitudes. The Brabazon with Centaurus engines will have an economical cruising speed at operational altitude of 250 m.p.h., and it is expected to be used only for flight development work, but the B.O.A.C. production versions of the 167 Mk. II with eight Bristol Proteus airscrew turbines will be considerably faster, and will operate at a greater altitude. Four Mk. IIs have been ordered to date.

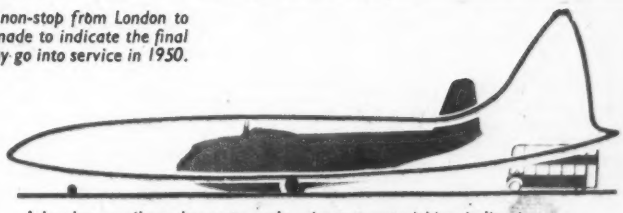
The 167 cabin will be pressurized to maintain an equivalent altitude of 8,000 ft when flying at 25,000 ft, and the air will, of course, be humidified and conditioned.

* *Flight*, November 21st, 1946.

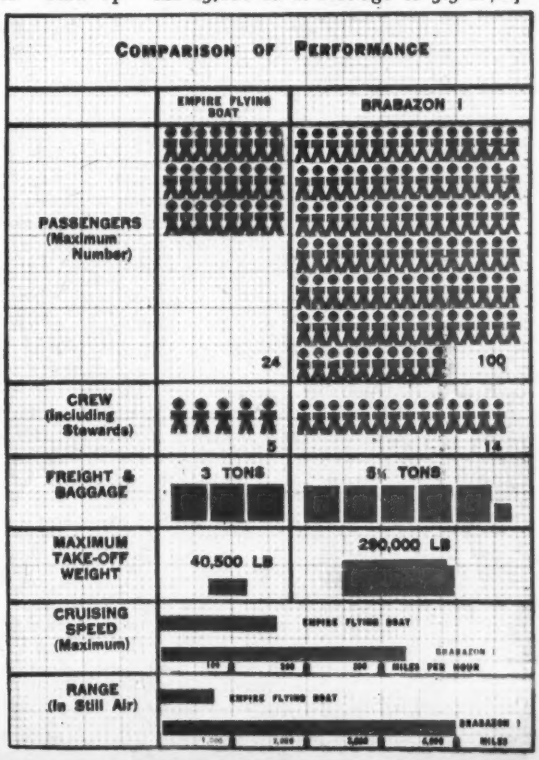



*the fir is to be called Brabazon, are designed to carry 100 passengers at high altitude, non-stop from London to may be seen the general layout of the cabins and compartments, but no attempt has been made to indicate the final fly early next year, and the production aircraft, powered with eight Proteus airscrew turbines, may go into service in 1950.*

First full-scale pressure tests are scheduled to be carried out during the next few days. Previously a complete nose section has been tested with satisfactory results. The particular date for these first pressure tests of the complete fuselage has been chosen to coincide with the works' holiday week, as it would be inadvisable, in view of the possibility of a panel blowing out, to have people working in the hangar. It is intended with the use of outside compressors, to "blow up" the 25,000 cu ft fuselage to 5·5 lb/sq in above atmospheric pressure, and the capacity of the compressors is such that this pressure should be reached in 15 minutes.



*A London omnibus, drawn to scale, gives an astonishing indication of the size of the Brabazon and an Empire flying boat.*




Expansion of a fuselage of such tremendous size presents no small problem, and although an internal pressure difference of 5·5 lb will cause an increase of only $\frac{1}{2}$ in in length and $\frac{1}{4}$ in in diameter, the effect of extremes of temperature (between −60 deg C and +40 deg C) would be a lengthwise expansion of no less than $4\frac{1}{2}$ in. A special test observation room has been built on the outside of the hangar wall, and these preliminary tests of air tightness will be observed through a reinforced window in the wall. One square inch of leakage area over the 30,000 square feet of skin is permitted. In flight, pressure will be maintained with the aid of Normalair blowers.

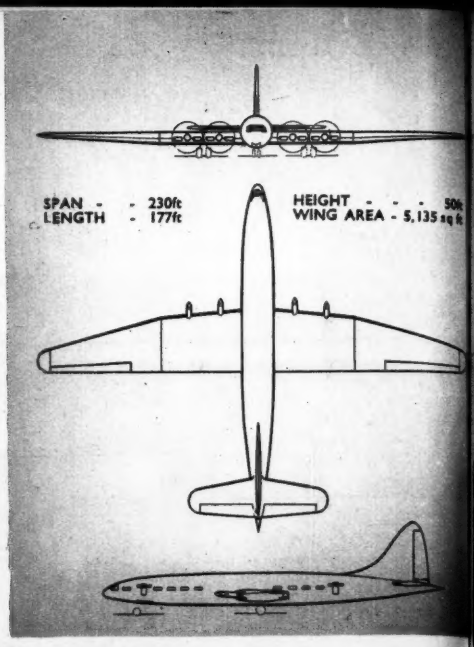
### Move to the Assembly Hangar

The first movement of the Brabazon I is expected to take place in September or early October, when it is transferred to its specially built T-shaped assembly hangar, which has a total capacity of 33,000,000 cu ft. A turntable will be built into the floor of the present constructional hangar to aid in the removal of the airframe to its final assembly site, and by planning every movement inch by inch it has been found unnecessary to move any of the buildings on either side of the path taken by the airframe, although at first it was thought that this would be essential.

Some idea of the enormous size and capacity of the 167 series may be gained from the accompanying outline drawings upon which are superimposed silhouettes of the familiar Empire flying boat and of a London omnibus.

If all goes well the first B.O.A.C. 167 should be ready for North Atlantic service in 1950, but it is much too early to discuss plans for operating the machines or to know whether they might be considered for use on other routes. Four years from now, American operators will be flying air-

*If previous photographs have failed to give a true impression of size, this illustration of one of the main Dowty undercarriage legs for the Brabazon will give a good idea of the massive size of the aircraft it will help to support. The weight of this leg is 1,799lb.*




**BRISTOL BRABAZON DATA**

*8 Centaurus XX engines—2,500 b.h.p. Rotol 16ft 3-blade co-axial airscrews.*

**Dimensions**

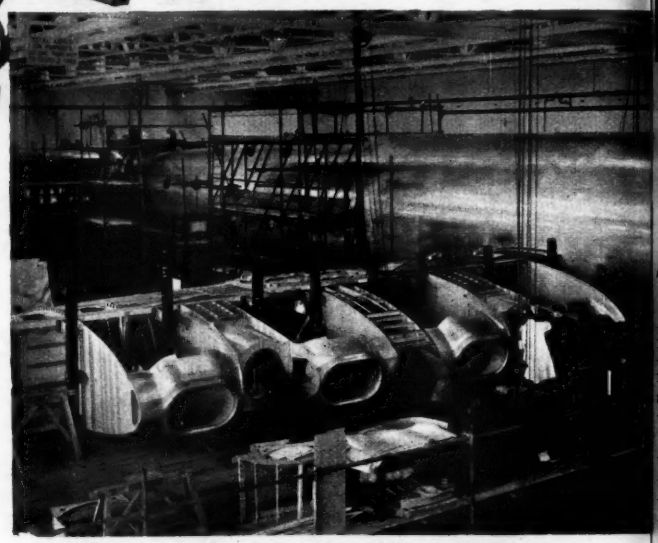
| | | | |
|---|---|---|---|
| Span | 230ft | Incidence | 3 deg 30 min |
| Length | 177ft | Outer plane dihedral | 2 deg |
| Length of pressurized section | 143ft | Sweep back: (inner wing leading edge) | 4 deg 12 min |
| Height over rudder | 50ft | Sweep back: (outer wing trailing edge) | 14 deg 56 min |
| Wing area | 5,135 sq ft | Wing loading | 54 lb/sq ft |
| Tailplane span | 75ft | Power loading: | |
| Tailplane and elevator area | 1,103 sq ft | (take-off) | 14.3 lb/b.h.p. |
| Fin and rudder area | 692 sq ft | (cruising) | 20.9 lb/b.h.p. |
| Max fuselage diameter | 16½ft | Gross weight | 285,000 lb |
| Wheelbase | 64ft | Max landing weight | 240,000 lb |
| Wheel track | 55ft | Fuel load | 13,000 gal |

**Performance**

| | | | |
|---|---|---|---|
| Normal cruising speed | 250 m.p.h. at 22,000ft | Service ceiling | 25,000ft |
| | | Still air range | 5,000 miles |
| Rate of climb S.L. | 750 ft/min | | |

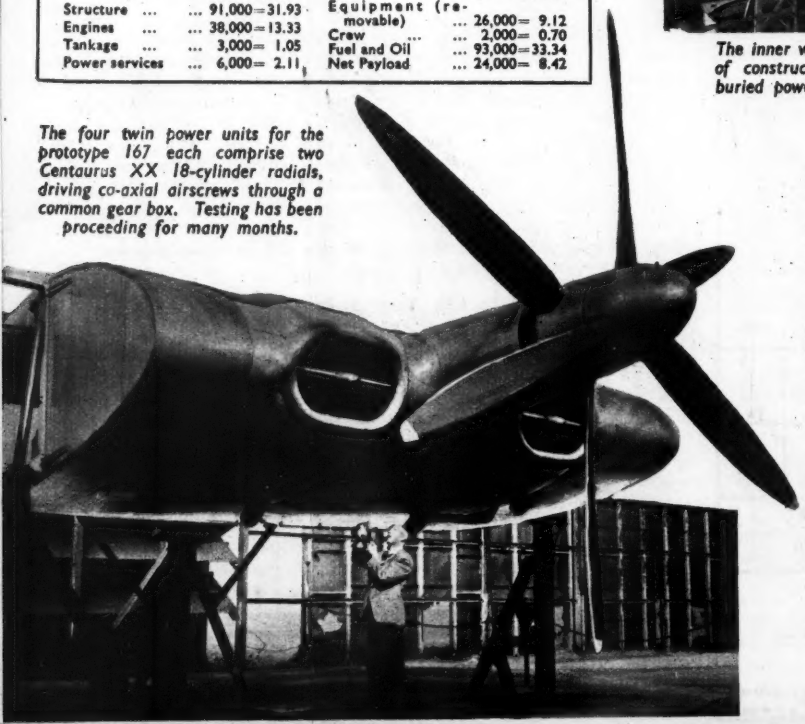
**Estimated weights**

| | lb | Percentage of A.U.W. | | lb | Percentage of A.U.W. |
|---|---|---|---|---|---|
| Structure | 91,000 | 31.93 | Equipment (removable) | 26,000 | 9.12 |
| Engines | 38,000 | 13.33 | Crew | 2,000 | 0.70 |
| Tankage | 3,000 | 1.05 | Fuel and Oil | 93,000 | 33.34 |
| Power services | 6,000 | 2.11 | Net Payload | 24,000 | 8.42 |



*The inner wings have now reached a fairly advanced stage of construction, and the large air intakes to cool the buried power units and the engine cells themselves are prominent features.*

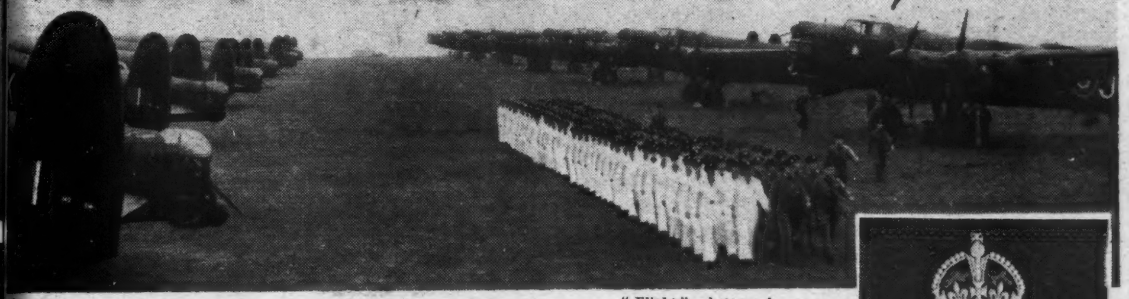
*The four twin power units for the prototype 167 each comprise two Centaurus XX 18-cylinder radials, driving co-axial airscrews through a common gear box. Testing has been proceeding for many months.*



craft of approximately the same size and of much the same performance, but it is B.O.A.C.'s aim not only to give greater comfort, as already mentioned, but to give the highest possible degree of safety. Such a spacious aircraft can, without difficulty, be equipped with complete communications equipment and not one but all the aids to navigation blind approach and, by that time, probably blind landing.

There is no doubt that airports with runways suitable for the Brabazon are few and far between, and there has been little enough evidence that this matter is receiving proper consideration. It will not be enough to have one or two terminal airports several thousand miles apart from which to operate the 167s, and the question of emergency landing grounds en route should already be under consideration. For flight trials the east-to-west runway at Filton is now being extended to 2,750 yd in length and 100 yd in width, and in airline usage at a later date, 3,000-yd runways will be the minimum length for safe operation of these aircraft.

# LINCOLNS WESTWARD BOUND



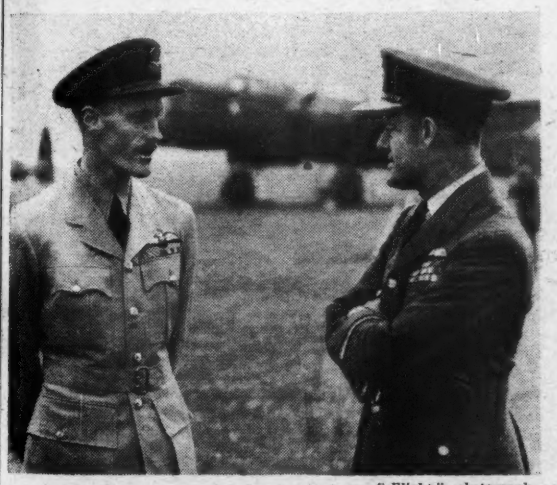
"Flight" photograph.

Aircrew of 617 Squadron are distinguished by blue overalls, ground crew by white. They are marching into position at the end of two ranks formed by sixteen Lincolns.

## *Sixteen Aircraft of 617 Squadron Prepare for Transatlantic Trip*

TAKING off at ten-minute intervals, at appreciably less than their maximum overload weight of 82,000 lb, sixteen Avro Lincoln Mark II heavy bombers of No. 617 Squadron were due to leave their base at Binbrook, Lincs, at 0800 hr yesterday and head for Gander in Newfoundland. This first 2,000-mile leg will be longer than any of the subsequent series of training and goodwill flights to be made in Canada and the U.S.A.

It is fitting that 617 Squadron should have been selected to undertake the mission, for its history, though short, is unique in the Service. The squadron's first great exploit, the breaching of the Mohne and Eder dams, is commemorated in its badge, now beautifully reproduced on the nose of each Lincoln. A dam is seen burst asunder by three shafts of lightning, and below is the motto *Aprés moi le déluge*. But the dam raids were only the beginning of a gallant story. There followed such exploits as the sinking of the *Tirpitz*, in conjunction with No. 9 Squadron, and the audacious radar spoof of D-Day. Together with No. 9 Squadron "617" was training at the end of the war as a component of the Tiger Force to operate in the Pacific. Its role was to be that of a Tallboy squadron, i.e., it was to operate with 12,000 lb bombs, which could not be handled by the American B-29s.



"Flight" photograph

Air Vice-Marshal C. E. N. Guest, C.B., C.B.E. (right) discusses the Atlantic crossing with W/C. G. D. Milne, D.F.C., Officer Commanding 617 Squadron.

No. 617 Squadron is a unit of No. 1 Group, but with its sixteen fully manned and serviced Lincolns, is certainly not typical, in strength at least, of present-day Bomber Command units. This distinction it shares with the 340th Squadron, U.S.A.A.F., which flew here during June in nine Superfortresses drawn from more than one squadron of the 97th Bombardment Group.

### In Command

Leading the British mission is G/C. W. J. P. Thomson, D.F.C., the Squadron Commander is W/C. G. D. Milne, D.F.C., and the two Flight Commanders are S/L. C. K. Saxelby, D.F.C., and S/L. A. G. Lang, D.F.C. S/L. R. B. Stocks is the Engineer Officer. The Air Officer Commanding No. 1 Group, A.V-M. C. E. N. Guest, C.B., C.B.E., will not accompany the squadron but it is probable that late in August Air Marshal Sir Hugh Saunders, K.B.E., C.B., M.C., D.F.C., M.M., Air Officer Commanding-in-Chief, Bomber Command, will be flown over to Canada and the U.S.A. by S/L. D. B. Bretherton, D.F.C. (This officer is known for his ability (among other things) to demonstrate the Lincoln on any number of Merlins from one to four.) Well over two hundred personnel will be flying in the sixteen Lincolns. Others have already gone ahead, some of them in a York, which will act as a tender to the squadron.

The Lincolns of 617 Squadron are modified to the latest standards and are fitted with Merlin 68A engines. Our American friends can hardly fail to be impressed by the immense capacity of the Lincoln, and although some of

## Lincolns Westward Bound . . . . .

the delicacy of line which characterises their own B-29 may be lacking, they will learn that the British bomber is "no slouch," having a maximum speed of 319 m.p.h. at 18,500ft. They may also remark on the excellent take-off characteristics: at a flying weight of 75,000 lb the Lincoln will clear a 50ft screen in only 1,150 yards. Her service ceiling at mean weight is 30,500ft.

For the transatlantic crossing bomb-bay tanks are installed and will allow a range of up to 3,800 miles. These will be discarded at Gander. Another point which will prove interesting to the Americans, but which is somewhat regrettable from the standpoint of our national prestige, is that Packard-built Merlins are fitted. These are not, however, the original Mark 68s but have been modified according to the latest standards—hence the "A" designation. They embody the latest strengthened connecting rods, filters for the constant-speed unit, and their carburettors are adjusted to avoid surging and the ill-effects of ice. British magnetos with fixed ignition have been adopted, and there are various other modifications which improve dependability.

The Lincolns will carry full armament of four 0.5-in and two 20-mm guns but no ammunition. The Gee has been displaced by Loran, and oxygen points have been embodied for the use of passengers.

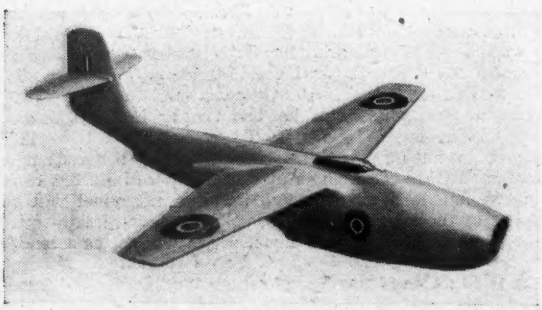
According to the planned itinerary, the squadron will arrive on July 28th at Andrews Field, Headquarters of the Strategic Air Command, U.S.A.A.F., Washington, D.C. On August 1st they will take part with American squadrons in Air Force Day celebrations, afterwards landing back at Andrews Field. August 4th should see them at Selfridge Field, Detroit, Michigan, which is the Headquarters of the 56th Fighter Group, 15th Air Force. En route to this base they will fly over Toronto, Windsor and London (Canada). Four days later they are due at Smoky Hill, Salina, Kansas, the home base of the 340th Bombardment Squadron lately seen over England. The next call (August 10th) will be at Mather Field, Sacramento, California, where the U.S.A.A.F. Training Command has its main navigational and bombing school. March Field, Los Angeles, the Headquarters of the 12th Reserve Command, will be reached on August 13th, and Fort Worth, Texas, Headquarters of the 8th Air Force, on the 18th. Four days later the squadron will be at Maxwell Field, Montgomery, Alabama (the A.A.F. University is located here), and by the 25th they will be back at Andrews Field. On

*Third from the left is G/C. W. J. P. Thomson, D.F.C., who is leading the mission. The other officers, from left to right, are S/L. C. K. Saxelby, D.F.C., W/C. G. D. Milne, D.F.C., and S/L. A. G. Lang, D.F.C.*

September 2nd they will be at Trenton, Ontario, one of the largest R.C.A.F. stations, housing the Central Flying School and Staff College, and on the following day are due to fly over the Dominion exhibition at Toronto. Gander or Greenwood, Nova Scotia, will be reached on September 5th, and on the 9th the Lincolns will take-off for home, arriving on the following day. It is to be hoped that their pilots will not be too tired after their long trip to fly over London and demonstrate the standard of formation flying they have attained in recent weeks. By then they will have had a great deal of practice.

### SR/A1 FLIES

ON the evening of July 16th the first prototype of the Saunders-Roe SR/A1 twin-jet fighter flying-boat was taken up for its first flight by Mr. Geoffrey Tyson, chief test pilot of Saunders-Roe, Ltd. Mr. Tyson was in the air for about fifteen minutes off the Isle of Wight, and his flight was uneventful. Earlier he had done taxying trials near Cowes. Thus, a unique new military aircraft has been initially proved, and it is reasonable to expect that it will make an appearance over Radlett during the S.B.A.C. display in September.



*A good idea of the clean appearance of the Saunders-Roe SR/A1 jet-propelled flying-boat can be formed from this picture of a model.*

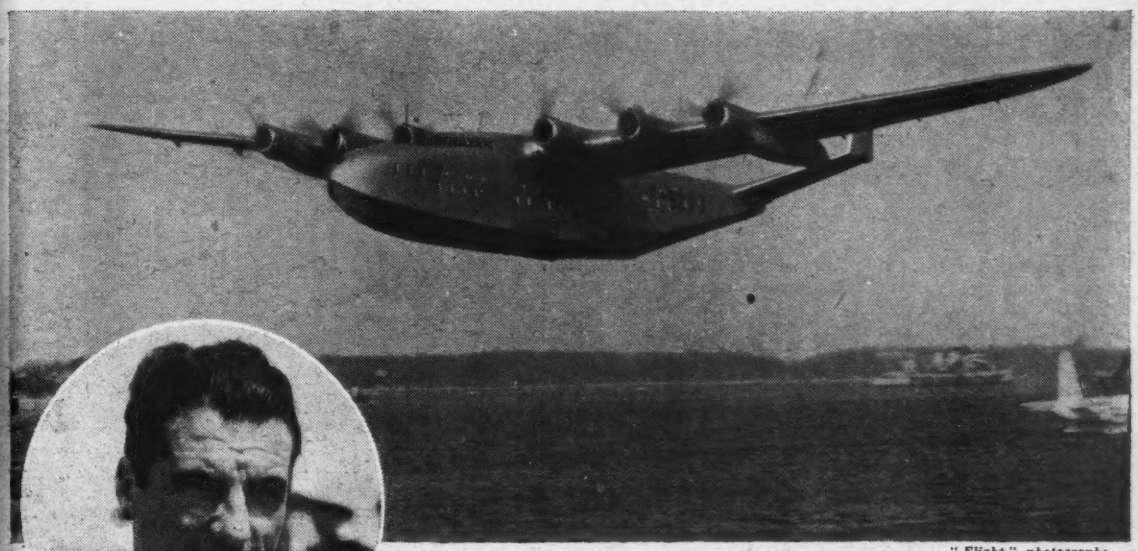
Technically the SR/A1 is of interest not only in being the first jet-propelled flying-boat, but in being fitted with two Metropolitan-Vickers F2/4 axial-flow jet units. These are totally enclosed in the hull and are fed from a single intake in the bow. The pilot's cockpit is pressurized, and an armament of four 20 mm guns is concentrated in the bow. Of single-spar construction with chordwise stiffening, the wing is of high-speed section. The wing floats are retractable. Hull construction features closely spaced frames and relatively light stringers. Estimated performance data have not been released but the following technical particulars may be given: span 46 ft; length 50 ft; height 17 ft; wing area 415 sq ft; aspect ratio 5:2; hull beam 6.83 ft. There appears to be no reason why the SR/A1 should not attain over 500 m.p.h. when the latest Metrovick jet units are installed.

### B.O.A.C. LEADERS

A DINNER party in honour of Lord Knollys on his retirement from the chairmanship of British Overseas Airways was arranged last Friday by Lord Nathan, Minister of Civil Aviation. The venue was the Connaught Hotel, and the new chairman of B.O.A.C., Sir Harold Hartley, was among the guests at this informal gathering, which included representatives from every sphere of British civil aviation.

### LE ZOUTE RALLY CANCELLED

THE Royal Aero Club of Belgium announce that owing to circumstances beyond their control the week-end rally at Le Zoute, scheduled to take place from August 2nd-4th, has been cancelled.



"Flight" photographs.

On a low run up the Solent the Latécoère 631-04 displays her fine lines. On the left is M. Prevost, the pilot.

## *Six-Engined 70-ton Latécoère 631 Demonstrates from Hythe*

# Massive Elegance

LIKE ourselves, the French have for many years appreciated the inherent qualities and future possibilities of the large, long-range commercial flying-boat. Unlike ourselves, they already possess a few machines of this class which, though falling short of the standards which will be set in two years' time by the SR45 (span 220ft, flying weight 120 tons, cruising speed over 300 m.p.h., range 5,000 miles), do at least approach the massive Saro in dimensions. One of these boats, the six-engined Latécoère 631-04, fourth machine of its class, was flown over last week from Biscarrosse to the B.O.A.C. base at Hythe, and was made available for flying experience and examination. The visit was arranged by Commercial Transocean (London), Ltd., the British representatives for the *Office Français d'Exportation de Matériel Aeronautique*.

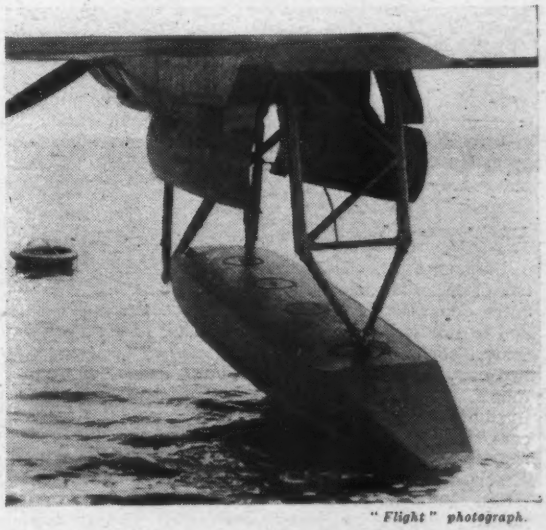
### Perseverance

The basic design of the 631 dates from 1938, when the first prototype was ordered by the French Air Ministry to meet a specification calling for a flying-boat to operate on the North and South Atlantic routes, carrying forty passengers for 3,700 miles against a 37 m.p.h. headwind. Between 1939 and 1940 construction was interrupted, but was put in hand again after the German occupation, and the first machine flew in November, 1942. Thereafter it was confiscated by the Germans and taken to Friedrichshafen, on Lake Constance, where it was eventually sunk by bombing. Flights have already been made over the South Atlantic to Latin American countries, and it is understood that Air France will shortly make a proving flight over the same route.

A considerable number of these flying-boats have been ordered. Nos. 2, 3 and 4 will go to Air France, Nos. 5, 6 and 7 to the Mexican Government, and 8, 9 and 10 to Air France. It is possible that Air France will ultimately order three more. The price, incidentally, is in the region of £350,000.

Everything considered, the Latécoère is a most creditable achievement. She is remarkable not only for her overall size and the spaciousness and arrangement of her interior, but for her graceful lines and very clean aerodynamic design. Points worthy of special notice are the lateral stabilizing floats, which retract into the tail fairings of the outboard nacelles, and the tail unit, with a dihedral tailplane carrying unbraced fin and rudder assemblies totally above it at its extremities.

As demonstrated last week, the 631-04 is laid out to



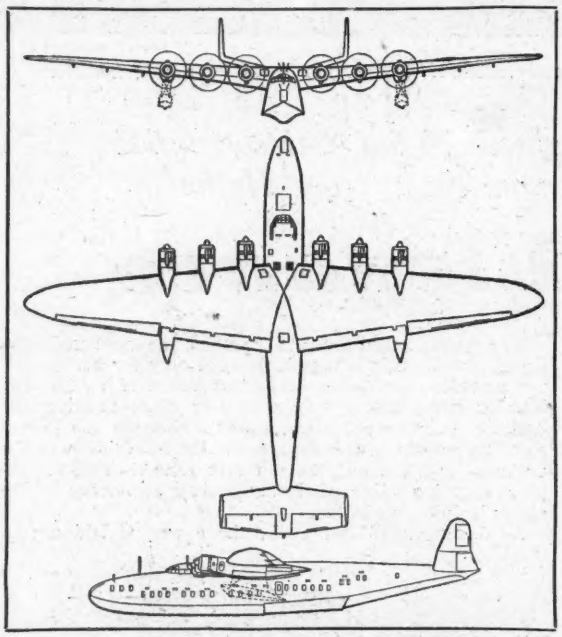
"Flight" photograph.

The starboard float assembly. When retracted the float completes the tail fairing of the engine nacelle.

## Massive Elegance . . . . .

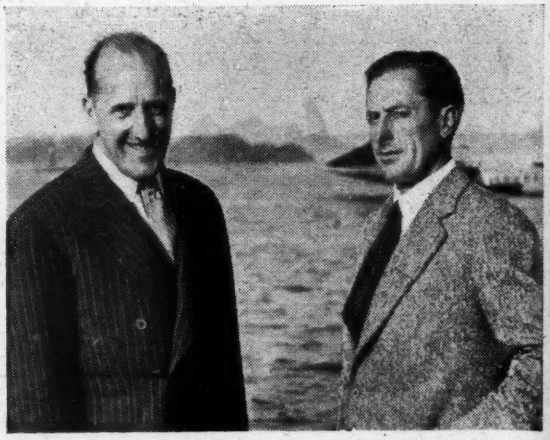
carry forty-six sleeping passengers on the North or South Atlantic route, and for short-range operation, e.g., 1,000 miles, will seat a hundred. The wing span is 188ft, the aspect ratio 9.4, and the gross wing area 3,760ft. At an all-up weight of 157,300 lb this gives the moderate wing loading of 41.5 lb/sq ft, which is particularly desirable in view of the high power loading of over 16 lb/h.p. The six Wright Cyclone GR 2600 A5B units at present installed give a take-off output of 1,600 h.p. each and allow cruising speeds of up to 185 m.p.h. at 1,500ft. From boat No. 5 onwards Wright engines giving 1,890 h.p. will be installed. We are asured by M. Castex, of O.F.E.M.A., that the substitution of Bristol Hercules would increase the cruising speed by as much as 40 m.p.h. With the present engines the maximum speed is 246 m.p.h. at 6,000ft, and it is claimed that, at a weight of 45 tons, flight is possible with three engines stopped on one side. Ratier 14-ft 3-blade, fully feathering, electrically controlled airscrews are fitted.

The claimed take-off time of 66 seconds, at a speed of



97 m.p.h., can well be believed, for with a heavy fuel load and carrying sixty-odd passengers for a demonstration flight over London (take-off weight 65 tons) the machine seemed to unstick in about 54 seconds. In the evening, with fewer passengers, the time was reduced to no more than 40 seconds.

The most critical passengers on flights last week seemed to be even more impressed by the interior appointments of the boat than by her external dimensions. The sensitive eye of Mr. Lonsdale-Hands found little fault. Aft of the entry door is a large kitchen with a Butane gas cooker, and in line with it are toilets. Moving forward along the central corridor one passes eight cabins, each containing two convertible armchairs, a bedding locker, and a wardrobe. These are screened from the corridor by curtains. Further forward are four more cabins, each seating four in convertible armchairs, and next comes a really spacious restaurant bar. This, being in line with the engines, is somewhat noisier than the other compartments, and the tables are inclined to vibrate. As in the other compartments, the ports are insufficiently wide, though this is a fault shared by many other large commercial aircraft of much later design. Here criticism of the bar must end.



"Flight" photograph.

*After an evening flight round the Isle of Wight Capt. Dudley Travers discusses the big French visitor with Mr. Geoffrey Tyson, who was due to test the SR/A1 jet fighter on the following day.*

Moving forward again (by this time the bow window is becoming distinctly visible in the distance) one discovers a baggage hold and another toilet, and further on still are two more blocks of cabins, one for eight and one for four passengers. Finally, immediately aft of the bow mooring compartment, is a cosy nook for two passengers. Through a large window in the extreme bow a view of the land or seascape immediately ahead is obtainable.

During most the flight from Hythe up to Mortlake, over London, and back by way of Shoreham, we were on the upper deck with the pilot, M. Prevost, who handled his huge charge with true French finesse. The crew compartment is austere, but everything seems to work well. One feature to which it is difficult to become accustomed, having been used to flying in Short boats, is the immense length of the bow, sloping away forward of the windscreen. This suggests the deck of a large cabin cruiser, an impression which is heightened by the mast amidships. On the London trip the ground speed was about 165 m.p.h. The altimeter reading is, perhaps, best left unrecorded.

In the evening M. Prevost paid his respects to Calshot, the Saunders-Roe works at Cowes, and the bases at Hurn and Poole. Passengers included General Phillipe, Chief Engineer, French Air Ministry; Dr. Ricardo; Capt. Dudley Travers; Capt. Alger; and—taking an evening off before making the initial flight in the Saro jet fighter—Mr. Geoffrey Tyson. We engaged in conversation a gentleman who was, perhaps, more impressed by the 631 than anyone else. By name Mr. R. F. Little, he was the flight engineer in the Dornier Wal, in which Frank Courtney made his west-east Atlantic bid in 1927.

### JAMESON FLAT-FOUR PROGRESS

THE prototype 100 h.p. Jameson flat-four light aircraft engine has just passed an official A.R.B. special category test and, as a result has been cleared for a ten-hour flight test under class B conditions.

Readers may remember that this engine employs a unique induction system giving progressive stratification of the charge mixture strength, obtaining by this means very low fuel consumption coupled with low operating temperatures and very smooth running.

At a power rating of 81.83 h.p. the specific consumption was 0.44 pt/b.h.p./hr, this figure remaining unchanged at a peak rating of 102.1 b.h.p. The highest cylinder-head temperature recorded throughout the test was 210 deg C, this applying to one cylinder only and being established after an hour's steady running. Oil outlet temperatures averaged just over 86 deg C, the highest recorded figure being 91 deg. Cooling air inlet temperature was 32 deg C for the major part of the test, the corresponding cooling depression being 6in water gauge. The barometer remained steady at 29.6in Hg.

The test was conducted on the original "first-off" engine, this unit having put in some hundreds of hours' running.

# CIVIL AVIATION NEWS

*A.R.B. Activity in Past Year : Light Aircraft Market in U.S.A. : Vikings on Scottish Services*

*FLYING SCOTSMAN: A Dakota on the B.E.A. London-Edinburgh service, standing on the tarmac at Turnhouse.*

## *A.R.B. REPORT*

THE Air Registration Board's report for the year 1946-47 was published last week. Tribute was paid to Sir Maurice Denny, who, as chairman of the Board since its inception in 1937, had guided its affairs until he retired in January, 1946. Sir Maurice is to remain a member of the Board. The chairman announced that Mr. Gerard d'Erlanger had been nominated to represent the operators in place of Mr. F. C. R. Jacques, who had retired, and Mr. A. G. Elliott had been nominated by the constructors to fill the vacancy caused by the retirement of Sir Roy Dobson.

Reference was made to the work done by the British delegation to the first session of the Airworthiness Division of P.I.C.A.O., and the accomplishment of incorporating so rapidly the agreements in the British Civil Airworthiness Requirements. In November, 1946, the Board had published British requirements incorporating over 60 per cent. of the P.I.C.A.O. standards, and by March, 1947, the remainder were in an advanced stage of preparation. The Approval and Procedure Sections, the Aeroplane Section and the Reciprocating Engine Section were practically complete, the Propeller Section was about to be published, and part of the Glider and Turbine Engine Sections were in draft form. The Helicopter Section was in course of preparation.

It was hoped that during the course of the next twelve months the reciprocal acceptance of licences and airworthiness standards throughout the Dominions would be accomplished. A flight testing team had been established and it was now possible for the Board to make check flight trials and collaborate with the Aircraft and Armament Experimental Establishments in flight test work. Maintenance schedules submitted for approval between April 1st, 1946, and March 31st, 1947, numbered 173 and surveys for underwriters during the year had totalled 126. Thirty-six certificates for gliders had been issued, and ten certificates renewed.

The Board had made thirteen recommendations for the issue of Certificates of Airworthiness to prototype aircraft, and the number of recommendations for the issue of Cs. of A. to other than prototypes but including initial validation of foreign Cs. of A. was 1,250. Of these, 1,195 were in respect of series aircraft, 34 of modified aircraft, and 21 in respect of validation of foreign certificates. The issue of Cs. of A. during the year exceeded the total number made for the nine years 1937-1946. There were 302 renewals of British Cs. of A. recommended during the year, of which 30 had been done overseas.

The effect of the general resumption on March 1st, 1946, of examinations for aircraft engineers, in accordance with revised procedure, was reflected in the 2,470 recommendations, three times as many as in the previous year. 3,500 applications were considered, but over 1,000 of the applicants were rejected as unsuitable for examination. The issue of 795 new licences was recommended. As in the case of other branches, the pilots' "B" licences had given the Board a great deal of work, there having been an enormous expansion since the war and whereas previously the examinations had been conducted orally, written papers were now required. The Board's register contained particulars of 1,238 aircraft, an increase of 758 during the year, and the list of subscribers now numbered 130. It is rather interesting to note that the number of persons employed by the A.R.B. does not exceed 160, including those stationed at overseas offices.

At a luncheon at the Savoy on July 17th Lord Brabazon paid a tribute to the late secretary of the A.R.B. Mr. Thomas, who, in spite of delicate health, refused to spare himself and gave of his best right up to the time of his death. "He was the father of us all," Lord Brabazon said. Referring to the constitution of the Air Registration Board, Lord Brabazon said it included four representatives of operators, four of manufacturers, four of insurers, and four of the general public. At the P.I.C.A.O., now I.C.A.O., meetings the British technical teams had great successes.

Lord Nathan, Minister of Civil Aviation, said he was glad to add his tribute to the work of the late Mr. Thomas, and under Mr. Hardingham, the new secretary and chief executive, and Mr. Tye, chief technical officer, the close co-operation with the Ministry would continue. He regarded the A.R.B. as his lifeline and the lifeline of the general public. Concerning the present independent status of the A.R.B. he said means would have to be found for maintaining and even increasing this status.

Sir Maurice Denny stressed the help that had been given the A.R.B. by British manufacturers in meeting increasing international requirements; by the Royal Aircraft Establishment in the matter of research; and by practical engineers whose advice had been sought.

Mr. Charles Gardner replied for the guests.

## *I.A.T.A. NEWS*

SIR WILLIAM HILDRED, the Director General of I.A.T.A., was in London last week on his way to Stockholm for a meeting of the Executive Committee, the cabinet of the Association. One of the first tasks will be the examination of applications for membership, of which there are about two dozen outstanding.

The annual general meeting of the Association is to be held in Rio de Janeiro on October 6th, and the delegates will stay at Quitandinha, forty-five miles from the city. At the meeting the new traffic area committees will hold separate conferences and then meet together to discuss travel between the areas. There was, Sir William said, a possibility that I.A.T.A. would form a medical standing committee. There are already four, financial, legal, technical and traffic, and this fifth would cover sanitation in aircraft, accidents, meals, inoculations and general cleanliness in airline operations. He mentioned that the Association was experiencing the closest of co-operation with I.C.A.O., whose headquarters were in the same city.

## *AMERICAN LIGHT AIRCRAFT*

DIFFICULTIES which were experienced by light aircraft manufacturers in the United States in settling down to post-war conditions have, it is believed, now been overcome. During 1946 more than 34,000 light aircraft were constructed, and the sales of Government surplus placed another 19,000 light aircraft on the market. Three-quarters of that number were two-seaters with low power, suitable for club and pleasure flying, but when the needs of the flying clubs had been satisfied the manufacturers found that they were producing far more light aircraft than could be sold. The Consolidated Vultee Company have built up an organization of dealers throughout

## Civil Aviation News . . . . .

the United States similar to the sales organization of the larger motor car manufacturers, and production three months ahead is being regulated by the number of orders, and particular attention is being paid to servicing and the distribution of spare parts.

The manufacturers believe that the greatest potential market lies among business men who prefer to use their own aircraft, and they believe that if this market is to be developed a break-away from the traditional two-seater light aircraft will be necessary. In consequence only about 50 per cent of the light aircraft now being manufactured are two-seaters, the rest having a larger capacity. In 1946, 75 per cent of the total output was devoted to the two-seater types.

### *BAHAMAS AIRWAYS*

AUTHORITY has been given by the American Civil Aeronautics Board for Bahamas Airways to fly air transports between the terminal point Nassau, the intermediate point Cat Cay, Bahama Islands, and the co-terminal points Miami and Palm Beach, Florida. The permit has been issued in accordance with the existing bilateral agreement between the U.S.A. and U.K. The company intend to operate a daily service throughout the year with a thrice-weekly stop each way at Cat Cay from December to April. P.A.W.A. at present provide a service between Miami and Nasau.

### *FIRE-FIGHTING*

THE Pyrene Company have produced a self-contained mobile fire tender equipped with mechanical foam and $CO_2$ fire-fighting apparatus. A specially constructed body on a Bedford chassis has been designed to house mechanical foam-generating equipment capable of producing 2,500 gallons of foam per minute, augmented by a $CO_2$ gas fire-fighting installation producing 300 lb of $CO_2$ within a period of approximately 1½ minutes. The vehicle is designed to allow the hoses to be run out as soon as it arrives on the scene of the fire. Whilst two members of the crew carry the foam hoses forward, the $CO_2$ hoses can be run from the rear, and the driver, in the meantime, operates the foam and $CO_2$ controls. One of these tenders has been supplied to the States of Jersey Airport.

### *TRANSATLANTIC MAIL RATES*

LAST month the American Civil Aeronautics Board decided upon the figure of $1,484,000 as a fair and reasonable rate of compensation for carrying mail across the Atlantic on the Pan American services. The rate is equivalent to 80.28 cents per revenue aircraft-mile flown, and does not cover service on the company's Miami-Leopoldville route. The compensation would result in an operating profit of $352,881, and such profit would yield a return of 7 per cent a year on recognized investment after the deduction of income taxes. Pointing out that the rate applied to a past period for which normal business risks had largely materialized, and uncertainties involved in estimating future operating costs were no longer present, the Board considered that a rate of return of 7 per cent a year was fair and reasonable.

In January, 1945, when commercial operations commenced, the company was in the process of converting from wartime operations to a peacetime commercial basis, and late in the year substituted Skymaster aircraft for the Boeing 314 flying-boats which had been previously in use. However, the resultant economy in operation was not fully realized during the conversion period in 1945 because of various cost factors associated with the transitional nature of the period and unavoidable delays in obtaining full utilization of aircraft.

### *M.C.A. OPERATIONS FLEET*

TWELVE aircraft make up the Ministry's own fleet which is based at Gatwick. Six Ansons are fitted with equipment for calibrating and testing M.C.A. navigational and landing aids and for doing any development work in which the Telecommunications Branch of the M.C.A. is interested. There are two Proctors, two Tigers and two Austers all of which are used for testing applicants for "B" licences, for survey work and for communications.

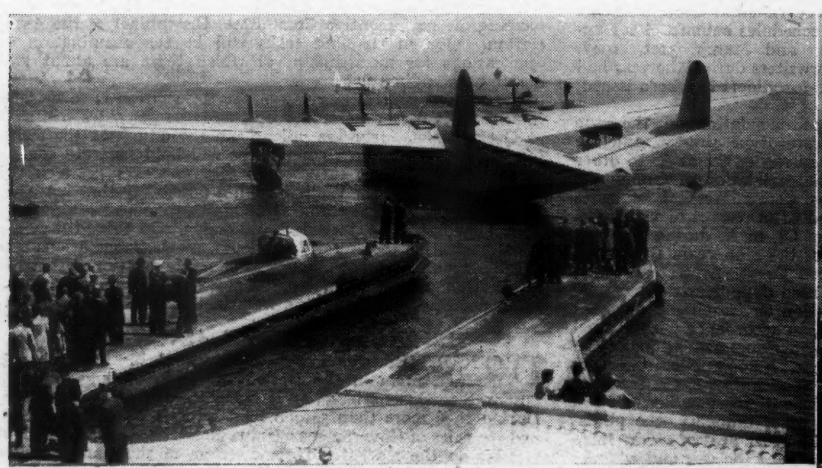
S/L. A. D. C. Carroll.

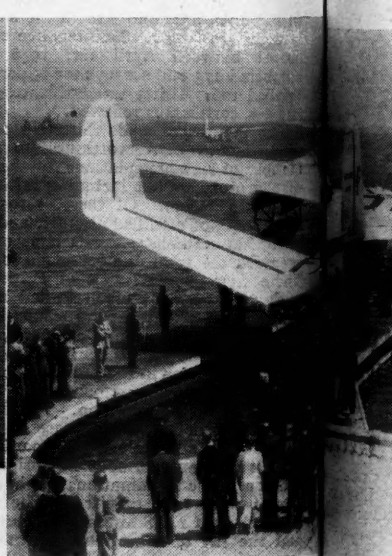
S/L. A. D. C. Carroll is in charge and he has eight ex-R.A.F. pilots and four more are being recruited. The pilots are qualified flying instructors with experience of S.B.A. and some technical knowledge of the equipment. The testing of "B" licence applicants takes a considerable amount of the fleets flying time and during June 72 applicants were given the general flying test, 25 test cross-country flights, and 25 night flights were made by "B" licence applicants.

A constant watch is kept on all landing aids by frequent testing in order to check any temporary interference.

### *Ex-R.A.F. AIRFIELDS*

THOSE airfields which are to be acquired by the Ministry of Civil Aviation were announced recently by Lord Nathan, and a map was published in last week's issue of *Flight*. On July 11th the Secretary of State for Air, in answer to a question in the House, said that final decisions had not yet been taken on the post-war requirements of airfields for the R.A.F., but he gave the following rather interesting information concerning the six hundred or so airfields in the United Kingdom which were in use on VE. Day. About 240 had been retained for Service use and 25 were being held on a care-and-maintenance basis. Seventy airfields had been reserved for civil flying, and seven returned to municipalities and local authorities. In addition to these, there were about 200 airfields being used for storage by Government departments other than the Air Ministry In addition to the seventy which had been reserved for civil flying, there were about fifty R.A.F. airfields at which civil flying would be permitted. The Minister added that the land on about 300 airfields had been given over to unrestricted agriculture, and at nearly all other





"Flight" photographs.

HARBOURED AT HYTHE: Docking the 70-ton Latécoère 631 flying boat at Hythe last Monday week when this impressive craft arrived for demonstration flights from the B.O.A.C. base. The 631 is claimed to carry 46 sleeping passengers and 7,000 lb of freight for 3,750 miles. A description of the visit and a flight in the aircraft appears on page 87 of this issue.

airfields held by the R.A.F. there was restricted agricultural use of the land.

### *NEW SCOTTISH SERVICES*

BRITISH EUROPEAN AIRWAYS' Scottish Division are introducing a midsummer timetable which comes into operation on August 10th. The Corporation have been endeavouring to increase the Scottish services for some considerable time, and recent deliveries of new aircraft have made it possible. A direct service three times a week in each direction with Viking aircraft is to be run from Glasgow to Copenhagen, taking 3½ hours for the journey. An additional morning service is being introduced on the Aberdeen-London route to enable travellers to spend more than six hours in London and return the same night. The Continental Division, which have had Vikings in service on some routes for several months, are now introducing the type on the routes to Paris and Berlin, and the service to Paris will consequently be increased from four to five flights daily in each direction.

### *CHALLENGE TO N.A.C. IN AUSTRALIA*

AUSTRALIAN airline operators intend to challenge the National Airline Commission's proposal to start air services between the States through the Government-chosen airline Trans-Australia Airlines. It had been announced by T.A.A. that a daily service would start on July 12th from Melbourne to Cairns, in North Queensland, stopping to pick up and set down passengers at Rockdale and Townsville, and the operators claimed that inter-State schedules run by the corporation were contrary to the National Airlines Act.

# *BREVITIES*

Mr. W. R. Verdon-Smith, director of Bristols, has been appointed a member of the Government's Economic Planning Board.

* * *

Air Vice-Marshal S. E. Storrar has been appointed Director of Civil Aviation in Palestine.

* * *

A passenger and freight service between New York and Santiago will be started shortly by Peruvian International Airways.

* * *

B.O.A.C. have appointed Mr. H. R. Hussey the buying adviser to the Corporation, and Mr. P. T. Griffith is to succeed him as chief buyer.

* * *

American Overseas Airlines are expecting to start operations with Stratocruiser aircraft at the beginning of next year on the London-New York route. Eight of these aircraft are on order for the company.

* * *

Two Piper Cubs were due to set off from New York last week for a flight around the world. Total mileage will be about 21,350 miles, and the trip is expected to take 45 days. The longest hop will be nearly 2,000 miles over water from Japan to Attu.

* * *

The Tasman Empire Airways' flying boat *Awarua* has been withdrawn after seven years' service. The flying boat was launched at Rochester in April, 1939, and after 587 hours' flying for Imperial Airways it was transferred to T.E.A. The total hours logged are 8,740.

* * *

With headquarters in Florence, the Italian company, Aereateseo, is now operating air services to important cities in Italy. President of the company is Signor Adone Zoli, and the managing director is Signor Attilio Morroichi. Dr. Giovanni Salatiello is the technical director

The Minister of Civil Aviation established in March a Directorate of Amenities to develop and improve existing amenities and to introduce further revenue-producing concessions at all State controlled airports in the U.K. Mr. Lionel T. Scott, a civil servant, has been appointed Director.

* * *

The Institute of Transport endowment fund of £100,000 which was launched last year, has now reached £60,000. Membership of the Institute now numbers 7,500, there having been a large post-war growth. The Institute of Transport has been a tenant of the Institute of Engineers for many years, but the new premises are nearly completed and the move is expected quite soon.

* * *

Sir Arnold Overton is to act as Permanent Secretary to the Ministry of Civil Aviation in the absence of Sir Henry Self, who has been seconded as from July 14th, at the request of the Minister of Fuel and Power, to serve on the organizing committee of the electricity industry.

* * *

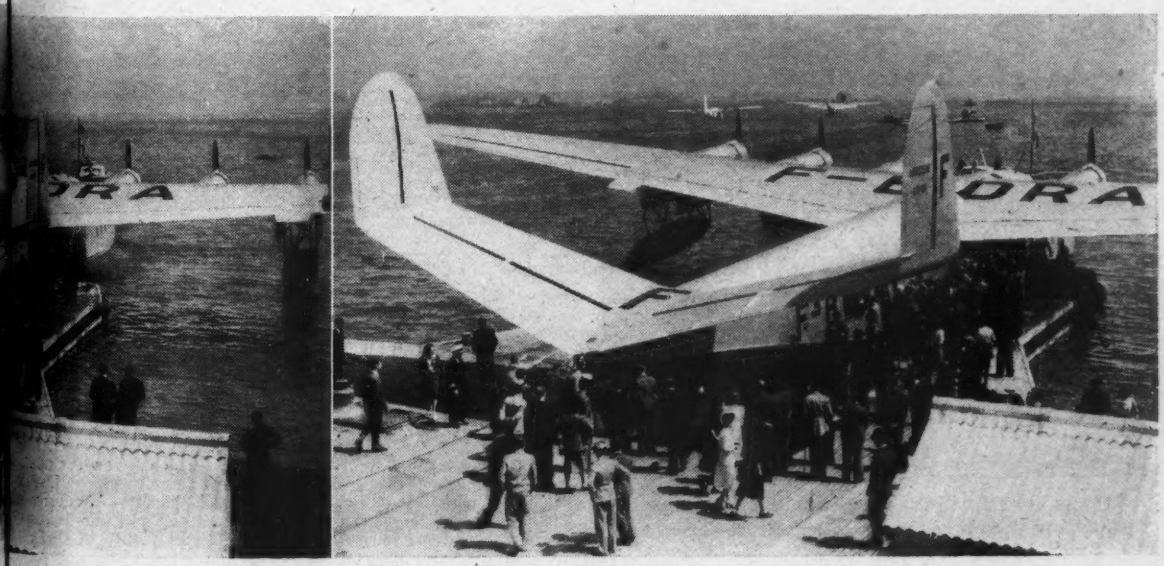
B.O.A.C have bought a second-hand Constellation for reconditioning, delivery of which is expected some time next month. Terms of the purchase are described as exceptionally favourable, and the aircraft will be used to supplement the existing transatlantic fleet.

* * *

The 1947 annual conference of the Aeronautical Engineers' Association will take place at the Cora Hotel, Upper Woburn Place, London, from September 5th-10th. It is understood that representatives will be present from airports in the U.K. and Eire, and from British and Irish aircraft operators.

* * *

On July 14th B.O.A.C. started the first civil air service into Ceylon from the West. The route has been opened by Halton aircraft flying once a week in each direction, and the schedule includes a 24-hour stop at Cairo on the outward journey, and a 12-hour day-time stop on the inward journey.



## Civil Aviation News . . . . .

The route is through Castel Benito, Cairo, Basra and Karachi, and departure days are Mondays from the U.K. and Saturdays from Ceylon.

* * *

Construction has started on the site for the new Buenos Aires airport at Ezeiza, sixteen miles out of the town. About 2¼ million pounds have been appropriated for developing the airport, but the final cost is expected to be much higher. There are to be six runways 2,500 yd long arranged in a tangential pattern with airport buildings in the centre. The surrounding country is such that the runways could be lengthened if necessary.

B.E.A. start, on August 12th, a night mail run on five days a week from London to Brussels and Prague with special Dakota freighters. After a stop of nearly two hours in Prague the aircraft will arrive back at Northolt at 1344 hrs each day.

* * *

Mr. V. E. Chenea has resigned, for reasons of health, from his position as vice-president and general traffic manager of Pan American Airways. He will continue to serve the airline as traffic consultant on a part-time basis.

* * *

British West Indian Airways have for the third year in succession received the Aviation Safety Award of the Inter-American Safety Council, for accident-free operation. The company has had no accidents during the whole of its six years of operation.

# FROM THE CLUBS

During June the Cambridge and University Aero Clubs completed 219 hours' flying with their Tiger Moths; this included 11¼ hours' night flying carried out for "B" licences. Eighteen-year-old Robert Widmark was a visitor from Sweden who took his "A" licence in five days, and "A" licences have also been granted to Mr. Jones and Mr. Craig. Mr. Bell carried out his first solo and Mr. Lush completed his instructor's course and was successful in gaining his certificate.

* * *

The Cardiff Aeroplane Club, which operates from Pengam Moors Airport, Cardiff, is running a flying scholarship under the auspices of the local newspaper (*Western Mail and Echo*), the managing director of which, Sir Robert Webber, has donated £100 for the contest. Entrants for the scholarship pay £1 to take a flying aptitude test with the club's C.F.I., Mr. George Kemp. The two entrants (one male and one female) who receive the highest assessments will obtain free flying tuition up to solo stage.

* * *

Aircraft of the Cinque Ports flying club flew a total of 95 hours during June but were unable to beat their May record of 121 hours, owing to the poor summer weather. Trips to Le Touquet are becoming a great attraction, and the reception and treatment there are very encouraging. The M.C.A. have now installed flying control at Lympne, and after a certain amount of "teething trouble" this is now working very effectively. Incidentally, a date to make a note of is August 30th, when the competitions for the Folkestone Aero Trophy and Lympne High-Speed Handicap will take place at Lympne.

*A group of young glider pilots at the Swedish glider flying centre at Ålleberg, in Western Sweden. The machines are Grunau Baby training gliders.*

Our congratulations to Mr. Charles Wingfield, of Shrewsbury, a member of the British glider team competing in the American National Soaring contest at Wichita Falls, Texas, who has broken the British long distance gliding record. In an Olympia E.O.N. glider he flew from Wichita to Canyon, Texas, a distance of 215 miles, and stayed aloft for seven hours. The record is subject to confirmation by the B.G.A. and the Royal Aero Club. As a result of this distance flight, and a height flight to 12,800 feet on July 4th, Charles Wingfield becomes the second British holder of the Golden Badge. He is a member of the Council of the British Gliding Association.

* * *

The Herts and Essex Aero Club which suffered heavy losses in a recent outbreak of fire (reported in *Flight*, July 3rd) have now purchased replacement aircraft to fill the gap. They are two Auster Autocrats, G-AJEC and G-AJEI, together with a Miles Magister, G-AJGM. A customs carnet has been obtained for one of the Austers and it is now available for flights abroad. Incidentally, Mr. Da Costa, with Mr. John Tsakvioglou and Miss Dundon, aboard Auster G-AJEI, won the first prize in the "Concours d'Elegance" for the most attractively turned out aircraft (and crew) in the Gloucester Flying Club display at Staverton on July 6th.

* * *

June proved a successful month for the Yorkshire Aeroplane Club. Five members carried out first solos and a total of 300 hours' flying were completed. Among the soloists were Mr. J. R. Brittain, the club's chief engineer, and Miss Pauline Davies, the first female member of the club to fly solo since the club was re-formed. As a result of the flying aptitude tests given during April and May (see *Flight*, July 10th), the *Yorkshire Evening News* Air Scholarship for a girl was won by Betty G. Robinson, a former Wren air mechanic, and that for a boy was awarded to Roger Mann, a Bevin boy from Leeds, who is an A.T.C. gliding instructor. The flying scholarship for a member of the W.J.A.C. was won by Staff Sergeant Joan Saunders, a Bradford weaver. The scholarship winners were presented with their certificates and welcomed to the club at a small party at which the directors and Miss G. Brook, Yorkshire Regional Commandant of the W.J.A.C., expressed their thanks to Mr. Frank Heywood, general manager of the *Yorkshire Evening News*. Night flying instruction is to commence at Sherburn in August, when D.B.S.T. ends, and those interested should communicate with the C.F.I.

* * *

A comprehensive programme of events has been planned for the Perth Air Display which is being held on August 16th at Perth Municipal Airport. The show, the first of its kind to be held in Scotland for eight years, should attract a large number of the local population as well as club visitors. It has received generous financial support from the Perth City Council, and has been organized by the executive staff of Airwork, Ltd., under the chairmanship of Mr. F. D. Nugent, the airfield manager, with the assistance of Mr. A. M. Mackay, secretary of the Strathtay Aero Club. Visitors arriving at the display by air will have the choice of competing in two arrival competitions; one to be held on Friday, the 15th, between 1400 and 1800 hrs B.S.T., the other on Saturday, between 1100 and 1200 hrs B.S.T. Prizes of £5 and £2 will be awarded to the winners of each competition. The air display will be opened at 2 o'clock by Lord Provost J. Ure Primrose, D.L., J.P., and the events which follow include formation flying, aerobatics, gliding, parachuting (Mme. Michelle Bellu-Decourt) and model aircraft displays. Features of the show will be a spot landing competition and one-design scratch races for Auster Autocrats and Tiger Moths. A static exhibition is also included in the programme.

# CORRESPONDENCE

*The Editor does not hold himself responsible for the views expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters*

## SQUADRON MARKINGS

### *Why Not Revert to Pre-war Colours ?*

IT pleased me to read in your reports of the Derby and Blackpool displays that at least one R.A.F. fighter squadron —No. 41—has taken advantage of the new silver finish for fighters to revert to its pre-war squadron markings. Surely there is everything to be said in favour of a general re-adoption of these colours. Squadron tradition would be perpetuated, recognition made easier and, not least, some vivid colour would relieve the drabness of our existence. Moreover, there must be a certain recruiting value in colour. Remember the sergeant's sash? H. REDMAN.

## HELICOIDAL ENGINES

### *Would They Prolong the Life of the Piston Engine*

I AM especially interested in the excellent article appearing in your issue of July 3rd relative to the Pratt Whitney 28-cylinder Wasp Major, an engine designed on what is known as helicoidal lines.

You may recall that several years ago I drew your attention to a similar engine of even more powerful design which embraced 36 cylinders arranged helicoidally in the same manner as the Wasp Major, and of which engine I held the patent rights for this country. You published the details in an article in *Flight* of November 9th, 1939.

The development of the Pratt Whitney engine, and its use in modern aircraft, clearly substantiates the claims put forward by me in favour of the 36-cylinder engine. Had that engine been developed it would undoubtedly have been a great technical advancement in aircraft engine design, having advantages in performance which could usefully be incorporated in both civil and military aircraft. Unfortunately the engineer who conceived the helicoidal system for piston engines was, and has been, unable to put his patent into production owing to lack of financial support.

Your correspondent "Interested," in the same issue (July 3rd, 1947), points out that there appears to be a tendency for the continued development of the high-output piston engine to be neglected in this country in favour of the jet engine, which, in his view, is undesirable, since the former engine may well have a number of years of useful life before it.

There need have been no grounds for reproach in this regard had the more powerful 36-cylinder engine been developed, which could now be done but for the financial reasons previously referred to. B. D. INNOCENTI.

## EXAMINATIONS AND FLYING HOURS

### *A Protest and Claim from Holland*

WITH reference to *Flight*, July 10th, page 38, under "International Problem," we read that the reason why an Iraqi who does not speak English should wish to obtain an M.C.A. navigation licence is that it is regarded as the highest standard of licence in the world. By adding that French, Dutch, Belgians and Poles are constantly sitting for this examination I presume you mean to indicate that they do so because of this "highest standard in the world."

I am afraid that I have to disappoint you a little bit where the Dutch are concerned, as the reason some of them sat for the M.C.A. examination was not because it was the highest standard in the world, but because they failed to take it over here.

Furthermore, I would like to refer to page 45 where you state that Captain Alcock, of Airways Training, Ltd., has now flown 20,000 hours and is still on flying duties, and that it would be interesting to know if there were any pilots still flying with a greater number of flying hours.

In K.L.M. Royal Dutch Air Lines, Captain Ivan Smirnoff, who has been with the company since 1922, has flown for K.L.M. 25,310 recorded hours up to January 1st, 1947. On top of that we have to include the number of hours flown before he joined K.L.M., as he was a pilot in World War No. 1, and it is safe to assume that in the years before 1922 he managed to fly somewhere around 1,500 hours. Since January Captain Smirnoff has flown a little over 500 hours which brings his total number of hours up to July, 1947, to 27,300 and he still continues to add to this number with an average between 80 and 100 hours a month. "DUTCH."

## A.T.C. OFFICERS' MEDALS

### *Defence and War Medals Refused*

THERE is a very strong feeling that the work of Training Branch officers of the Royal Air Force has not been adequately recognized. The work they performed during the war was acknowledged to be of great value to the Royal Air Force, not only in bringing potential entrants up to the required educational standard but also in the negative aspect of weeding out those who could not attain that standard before they entered the Services.

Conscientious Training Branch officers devoted fully as much time to the training of A.T.C. cadets as any Home Guard officer did to the training of his men. In addition to parades —usually twice a week—and week-end visits to airfields, they attended courses at Initial Training Wings and Officers' Training Schools, specialized courses in navigation, armament, etc., as well as annual training at air stations. During courses and annual training they were entitled to receive pay and allowances as in full-time employment.

So far they have received no recognition. The Defence Medal has been refused them on the ground that they were not mobilized, and a ruling has been given that they are not eligible for the War Medal 1939-45. Now it is expressly provided that all R.A.F. personnel other than operational air crew are entitled to the Defence Medal, which is granted for service in the Forces in non-operational areas, and the War Medal is to be granted to full-time personnel of the Armed Forces wherever their service has been rendered, in each case subject to certain qualifications as to duration of service. The recommendations of the Committee on the grant of Honours, Decorations and Medals provide that any questions of difficulty in connection with the scheme, including interpretation and so forth, will be a matter for reference to the Committee on the grant of Honours, Decorations and Medals.

I am not aware that the question of the eligibility of Training Branch officers has ever been submitted to the Committee.

My information is that claims already submitted have been rejected by serving officers of the Royal Air Force. I contend that the service which Training Branch officers have given entitles them to a War Medal, and that on the terms of the Committee's recommendations they are entitled to both the Defence Medal and the War Medal 1939-45 provided they have the qualifying service. The only authority competent to decide whether they are so entitled is the Committee on the grant of Honours, Decorations and Medals.

C. R. HUMPHRIES (S/Ldr., R.A.F.).
Late Commanding A.T.C. Officers' Courses.

### FORTHCOMING EVENTS.

July 26th and 27th.—United Services Flying Club: Air display and air rally. Elstree airfield, Herts.
July 30th to August 9th.—Aero Club of Switzerland: International gliding contest. Samaden in the Engadine.
Aug. 1st.—Start of Belgian "Aerial Fortnight," Le Zoute.
Aug. 2nd and 3rd.—Aero Club de Versailles: Toussus le Noble.
Aug. 2nd to 4th.—Royal Aero Club of Belgium International air rally Le Zoute.
Aug. 3rd.—Society of Model Aeronautical Engineers: Bowden Trophy contest for power-driven models, Fairlop airfield, Chigwell, Essex.
Aug. 9th and 10th.—Southend flying meeting.
Aug. 16th.—Strathtay Aero Club: Perth air display.
Aug. 20th. to 29th.—Twenty-Second Model Engineer Exhibition. New Royal Horticultural Hall, Vincent Sq., S.W.1.
Aug. 22nd to 25th.—Norwegian Aero Club: Air rally, Tönsberg, near Oslo.
Aug. 28th. to Sept. 13th.—Engineering and Marine exhibition. Olympia, London.
Aug. 30th and 31st.—Cinque Ports Flying Club: Folkestone Air Races meeting. Lympne airport.
Sept. 3rd to 6th.—Royal Aeronautical Society: Aeronautical Congress.
Sept. 6th.—Naval Aviation: Air display and static exhibition. Lossiemouth air station, Moray, Scotland.
Sept. 9th to 12th.—S.B.A.C. Exhibition and Display.
Sept. 14th.—Royal Aeronautical Society: Garden Party, Radlett airfield.
Sept. 17th to 19th.—Federation Aeronautique Internationale: Annual General Conference, Geneva.
Oct. 19th to Nov. 24th (approx.).—Royal Aero Club of Belgium. Air rally to the Belgian Congo. (Brussels to Le Kivu.)

# SERVICE AVIATION

"Flight" photograph.

AT THORNEY ISLAND: *Some crews of No. 42 Squadron with their Beaufighter Xs. W/C. A. Gadd D.F.C., who commands the squadron, is in the centre of the group, wearing a peaked cap. For the war period No. 42 Squadron became No. 254 Squadron.*

## Award

HIS MAJESTY THE KING has been graciously pleased to approve the following award:—

**Distinguished Flying Medal**

(With effect from February 19th, 1944)

*Flight Sergeant (later Warrant Officer Albert Grange, Royal Air Force Volunteer Reserve, No. 7 Squadron, Bomber Command (deceased).* This airman, as airgunner, completed a large number of operational sorties over enemy territory. He took part in attacks on many of the most heavily defended targets in Europe, and invariably displayed outstanding courage, fortitude and devotion to duty.

## Congratulations to Princess Elizabeth

THE following messages have been sent by the Secretary of State for Air, the Rt Hon. Philip Noel-Baker, M.P.:—

"To Their Majesties the King and Queen:

"The Air Council beg to offer your Majesties warm congratulations on this happy occasion of the betrothal of your daughter."

"To Her Royal Highness, Princess Elizabeth:

"On the occasion of the betrothal of your Royal Highness I beg to offer, on behalf of the Air Council, warm felicitations and cordial good wishes."

## R.O.C.—350 in June

DURING June 289 men and 58 women applied to join the Royal Observer Corps. Nearly 10,000 men and 1,500 women have joined the Corps since recruiting began last November.

# *Royal Air Force and Naval Aviation News and Announcements*

## Air Commodore Vachell

*FLIGHT* regrets to record the death of A. Cdre. John Lyne Vachell, M.C., who was air attaché in Berlin before the war. He died at Halton on July 11th after a long illness.

## Meteors Out East

THE climatic trials to which the Gloster Meteor jet fighter has been subjected in the Far East have already been mentioned in *Flight*. These trials follow tests which have been undertaken since 1945 under arctic conditions in North Canada and in the arid desert conditions at Khartoum. The Meteors now at Tengah airfield, Singapore, are of the latest Mark IV type. They are the first jet aircraft to be operated in the Pacific area and their performance has evoked some enthusiastic and delightful reporting in the Far Eastern press. Writing of the demonstration by W/C. H. A. C. Bird-Wilson, D.S.O., D.F.C., A.F.C., during the King's birthday celebrations at Tengah, Mr. Lim King Hor, Singapore Press reporter, says: "All the time as we watched this half-hour display we marvelled and we wondered, lost in admiration at the beauty and excellence of its flawless performance."

## R.A.F. at Bisley

W/O. R. BENNETT, with a score of 279, gained the King's Prize at Bisley on July 12th. This is the second year in succession that the prize has gone to a member of the R.A.F. In the first four, the other places were taken by S/L. A. J. Whiting and F/L. A. H. Vicars. W/O. Bennett has twenty-two years of R.A.F. service behind him, for fifteen of which he has been closely associated with S/L. C. C. Willott, last year's winner, who gave him initial shooting instruction.

Marshal of the Royal Air Force Lord Tedder was present at Bisley to present prizes. Royal Air Force successes were particularly gratifying. The Burdwan Challenge Cup was won by the R.A.F. with 4,617 points, the Whitehead Challenge Cup (Revolver) with 705 points, and F/L. H. A. Steele carried off the Revolver Gold Badge with 326 points. S/L. A. J. Whiting took the Scott (Revolver) Prize with 169, and the Gunmakers' Cup (Revolver) was won by R.A.F. Maintenance Command with 307.

## Vanbrugh Castle Reopens

AIR VICE-MARSHAL SIR JOHN CORDINGLEY, Controller of the Royal Air Force Benevolent Fund and former Director-General of Manning at the Air Ministry, last week reopened the Benevolent Fund's school for the sons of deceased airmen at Vanbrugh Castle, Blackheath. The school, which was closed at the outbreak of war, and which suffered bomb damage, will accommodate 48 pupils.

## More Recognition for A.T.C.

OVER-RIDING priority for entry to trade training courses will be given to ex-A.T.C. cadets who hold the Corps proficiency certificate and are doing their National Service in the R.A.F. Those ex-cadets who do not hold the proficiency certificate will be called forward for trade training in the normal order depending on the date of enlistment.

## No N.Z. Fleet Air Arm

THE introduction of a Fleet Air Arm unit for the Royal New Zealand Navy would mean that the present Naval vote of £1,200,000 would have to be at least doubled. Disclosing this in Auckland Captain C. R. V. Pugh mentioned that in Australia a Fleet Air Arm was being started "at enormous cost." The minimum requirement for New Zealand, he said, would be an aircraft carrier, and twenty other categories of men—double the present number—would have to be established for F.A.A. work.

## A.A.F. Appointments

THE Air Ministry announces the following Auxiliary Air Force appointments:

G/C. John Cherry, C.B.E., to command No. 3604 (County of Middlesex) Air Defence Unit.

S/L. Frank Eric Lissimore, M.B.E., to command No. 3620 (County of Norfolk) Air Defence Unit.

S/L. Arthur Leslie Horrell to command No. 3506 (Northamptonshire) Air Defence Unit.

*IN THE CHAIR: Warrant Officer R. Bennett after winning the King's Prize at Bisley on July 12th. This is the second successive year in which Britain's premier shooting award has gone to a member of the R.A.F.*

## W.A.A.F. Golfing Society

LAST week, July 17th, the W.A.A.F. Golfing Society held its first members' meeting at Beaconsfield, Bucks, Golf Club.

## "Triumph" on Summer Cruise

THE Mediterranean Fleet left Malta on July 17th to visit ports in Turkey, Russia, Greece and the Eastern Mediterranean on the first summer cruise.

Ships taking part will include H.M.S. *Liverpool*, flying the flag of the Commander-in-Chief, Admiral Sir Algernon U. Willis, G.C.B., K.B.E., D.S.O., and H.M.S. *Triumph* (Flag Officer (Air) Mediterranean, Vice-Admiral Sir Cecil Harcourt, K.C.B., C.B.E.).

## New Style Battledress

ALL R.A.F. personnel will in future be supplied with a new War Service dress (battledress). This will have tailored revers and no fastenings at the neck. The top pocket buttons and shoulder strap buttons will be of black plastic embossed with an eagle and crown, and the trousers will have two back pockets instead of one.

## Long Service Medal for Officers

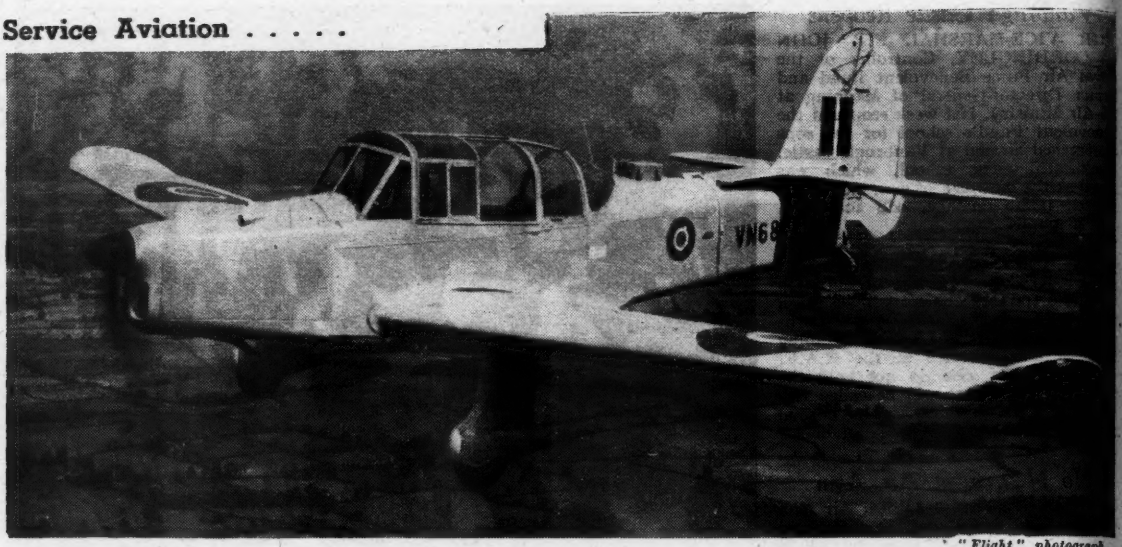
HITHERTO the Long Service and Good Conduct Medal has been awarded only to other ranks. Officers now qualify. This decoration is awarded after eighteen years' service, including not less than twelve years in the ranks of the regular forces. A further eighteen years' service, including not less than nine in the ranks, gains a clasp. The ribbon has two central strips of red and blue with edgings of white. Applications should be addressed to Air Ministry (S.7(d)), Adastral House, W.C.2.

## 106 P.R.C. Closing Down

NO. 106 PERSONNEL RECEIVING CENTRE at R.A.F. Station Cosford, Staffs, established in April, 1945, to deal with returning R.A.F. prisoners-of-war, will soon close down, and its few remaining responsibilities will be transferred to the Combined Selection Centre at R.A.F. Station North Weald. All returned P.o.W.s have now been disposed of, with the exception of twenty or thirty still in hospitals in this country, and about ten who were retained in the Far East for various purposes, including the preparation of evidence against the Japanese in connection with war crimes. Every R.A.F. officer or airman returning to this country from captivity went through Cosford. These numbered over 13,000—9,374 from Europe and 3,371 from the Far East. There were days

*REMEMBERING: Squadron Leader R. H. Holland, D.F.C. (left) and personnel of No. 66 Squadron Duxford, listening to the broadcast of the Abbey Service when the King unveiled the Battle of Britain Memorial Chapel.*

## Service Aviation . . . . .



"Flight" photograph.

*THREE-PLACE PRIMARY: The very large cockpit enclosure and upswept wing tips will be recognition features of the production Percival Prentice R.A.F. trainer here photographed in flight for the first time. Until final approval is forthcoming from Boscombe, pre-production Prentices must fly with tail parachutes.*

when as many as 1,500 arrived, and during the peak period a thousand was no uncommon number.

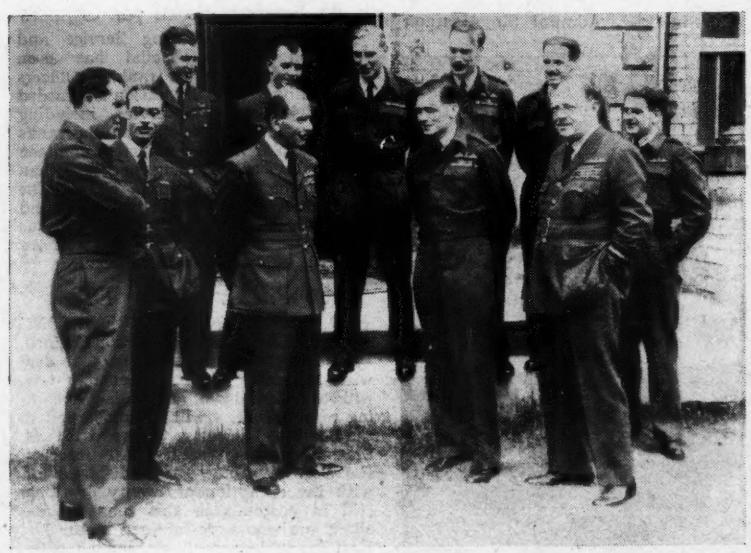
### *W.A.A.F. at Hawkinge*

THE future training centre for the W.A.A.F. at R.A.F. Hawkinge, in Kent, is to be commanded by Wg/O. N. Dinnie, formerly Officer Commanding the W.A.A.F. Recruit Centre at Wilmslow. Courses lasting three weeks will begin in October for officers appointed to extended service commissions for three, four or five years. Separate courses have been arranged for N.C.O.s, potential instructors, who will hold the rank of Corporal or above, and serving or ex-serving W.A.A.F. who have signed on under the extended service scheme.

### *The Peacetime R.A.A.F.*

BASED on an expenditure of £A12,500,000, the Royal Australian Air Force will consist of some 12,625 officers and men and will have 16 squadrons comprising 144 aircraft, backed by a reserve of 439 operational aircraft and 698 machines for training and miscellaneous duties. There will be a Static Home Defence unit of 7 squadrons, with auxiliary units, and a Task Force of 9 squadrons, designed in an emergency to provide a striking force which could be used to support other Services or operate independently. In the Home Defence Force there will be 4 interceptor fighter squadrons of 8 aircraft each (probably Nene-Vampires), 1 heavy bomber-general reconnaissance squadron, 1 target-towing squadron and an air-sea rescue squadron. The interceptor squadrons will be Citizen Air Force units and will be located at the capital cities. The Task Force will have 90 aircraft and 2,061 men and will comprise 2 long-range fighter squadrons, 3 heavy bomber squadrons, 2 transport squadrons, 1 tactical reconnaissance squadron and 1 survey squadron.

In 1938-9 the total number of squadrons was to have been 21.



*C.-in-C.'s VISIT: A.V-M. Sir Alan Lees, C.-in-C. Reserve Command, lately visited No. 608 (North Riding) Squadron, A.A.F. at Thornaby-on-Tees. He is seen with officers of the squadron: Back row, l. to r., F/L. J. M. McAllister, D.F.C., F/L. G. C. Unwin, D.F.M., F/L. H. W. Oliver, F/O. A. Gavan, F/O. I. P. Grant, F/O. J. D. Turnbull. Front row, l. to r., F/L. J. Hodgson, D.F.C., F/L. J. Crawford, A/Cdre. B. V. Reynolds, C.B.E., A.O.C. No. 64 (Northern Reserve) Group, S/L. W. Appleby-Brown, D.F.C., Commanding Officer, Sir Alan Lees, K.C.B., C.B.E., D.S.O., A.F.C.*

### *R.A.F. Dinner Club*

DUE to the war, membership records of the Royal Air Force Dinner Club are incomplete. All life members and annual members as at 1939 are requested to send their names and rank, decorations (if any), and present address to the Hon. Sec., Royal Air Force Dinner Club, Room 537, Air Ministry, Adastral House, Kingsway, London, W.C.2. Particulars of the club's future will be announced in due course. Meanwhile applications for membership cannot be entertained.

### *Reunions*

ALL former members of 125 Squadron interested in a reunion should communicate with R. A. Pargeter, 2, Lunham Road, Upper Norwood, S.E.19.

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So successful was the first 224 Group reunion at the Connaught Rooms on June 28th that it is proposed to make it an annual function. A. Cdre. The Earl of Bandon, C.B., D.S.O., presided, and the guests of honour included Air Chief Marshal Sir Richard Peirse, K.C.B., D.S.O., A.F.C., and Air Marshal Sir Alec Coryton, K.B.E., C.B., M.V.O., D.F.C.